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ABSTRACT

The 18 papers in this proceedings describe strategies and practices used in undergraduate psychology courses at two- and four-year colleges. The following presentations are included: "The Costs and Benefits of Critical Thinking," (Randall E. Osborne, Judy Laws, Ken Weadick, and Vicki Mantooth); "What's a Developmentalist To Do?" (Judith Luis); "The Use of Role Playing Techniques Helps Students Understand Organizational Principles," (Edward J. Murray and Carol A. Puthoff-Murray); "Distance Learning in Psychology: Organizing, Managing, and Mentoring," (Patricia A. Oswald); "The Quest for Respect: Quality Within a Distance Education Context," (Kenneth C. Elliot); "The Bigger Picture: Context in the Research Methods Course," (Susan M. Schneider); "Teaching Concepts in Experimental Psychology through Journal Articles: A Technique that Works!" (Susan K. Marell); "Computer Aided Statistics Instruction Protocol (CASIP) Restructuring Undergraduate Statistics in Psychology: An Integration of Computers into Instruction and Evaluation," (Ki-Young Rah and Michael Scuello); "Teaching a Test and Measurements Course by Developing a Measurement Instrument," (Margaret D. Anderson); "Psychometric Scales: Learning by Doing," (George C. Fago); "Human Development or Developmental Psychology: That Is the Question, or What's in a Name?" (Julie Guay-McIntyre, Leslie A. Grout, Sybillyn H. Jennings, and Jean E. Poppei); "The Road to Understanding the Self is Paved with Yellow Bricks," (Jeffrey B. Adams and Caterina Eppolito); "Depth by Doing: Cooperative Research Projects in Social Psychology," (Karen O'Quin); "Teaching the History of Psychology in Context, or Depth Without Breadth Leads to 'Shallow' Learning," (Howard M. Reid and John B. Morganti); "Engaging Students in Large Lecture Classes," (Gail Martino and Fabio Sala); "TQM in Class: From Disaster to Success in Essay Exams in Introductory Psychology," (Choichiro Yatani); "Psychodrama: Virtual Reality Simulation," (Gordon Whitman); and "A Writing Workshop for Sophomores," (Suzanne M. Phillips). The conference program is included. (TGI)

ED 405 022

Teaching of Psychology: Ideas and Innovations
Proceedings of the Annual Conference on Undergraduate Teaching of Psychology
(10th, Ellenville, New York, March 20-22, 1996)

Judith Levine and Gene Indenbaum, Editors

State University of New York, Farmingdale
College of Technology

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Teaching of Psychology: Ideas and Innovations

Proceedings of the Tenth Annual Conference

March 20-22, 1996

Judith R. Levine and Gene Indenbaum, Editors

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Introduction

The Tenth Annual Conference on Undergraduate Teaching of Psychology was held March 20-22 1996 at the Nevelle Country Club in Ellenville NY. The conference was sponsored by the psychology department of SUNY Farmingdale.

In addition to keynote addresses by Robert S. Feldman and Dennis Coon, the conference participants had 38 presentations from which to choose, as well as an array of publishers' exhibits to visit. Eighteen of the presentations are included in these conference proceedings.

The success of this conference was due to the dedicated work of many people. The conference committee was ably chaired by Dr. Gene Indenbaum, who was joined on the committee by Dr. Michael Hackett, Prof. David Griesé, and Ms. Barbara Sarringer. We would also like to extend our thanks to McGraw Hill Publishing Co. and West Publishing Co. for arranging for Dr. Feldman and Dr. Coon, respectively, to join us.

Judith R. Levine
Gene Indenbaum

CONFERENCE PROGRAM

the 10th annual conference
on undergraduate

Ψ

TEACHING of PSYCHOLOGY:

IDEAS & INNOVATIONS

presented by

The Psychology Department

of

SUNY FARMINGDALE
FARMINGDALE, NY

Wednesday, March 20 - Friday, March 22

1996

TENTATIVE PROGRAM

Wednesday, March 20, 1996

Registration 2:00 - 2:40

Session 1 2:45 - 4:00

Rm 1 Workshop: The Costs & Benefits of Critical Thinking
Randall E. Osborne, Judy Laws & Ken Weadick Indiana University East, IN

The costs and benefits of critical thinking are demonstrated to introductory students through the use of a group exercise. Students are given Monopoly money and the opportunity to purchase information about a case with the goal of investing their money wisely. After building their analysis of the case, groups are awarded points for amount of money left over and the sophistication (demonstration of critical thinking skills in their analysis) of their presentation to the class. This is a useful demonstration for fostering group work, illustration the costs and benefits to being a critical thinker, and encouraging synthesis of course information.

Rm 2 Psychodrama: Virtual Reality Simulation
Gordon Whitman,* Sandhills Community College, NC

A psychodrama to involve and enmesh introductory psychology students in personality, abnormal, and therapy concepts. A "virtual reality" person is created using "case study," interview, and the DSM. Students must determine a multiple diagnosis, a treatment plan, and follow-up procedures.

First-Person Narratives and Team Learning in an Introductory Psychology Course
Craig W. Platt, Franklin Pierce College, NH

This presentation will describe and evaluate an Introductory Psychology course design that integrated two aspects intended to enhance depth, coherence, and active learning. The design included (a) a semester-long group project centered on the reading of one of a selection of autobiographical books dealing with psychological or neurological disorders, and (b) a collaborative approach to textbook material adapted from the Team Learning method developed by Michaelsen.

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*INDICATES SESSION CHAIRPERSON

Rm 3 Collaborative Learning and the Student as Teacher: A Case Study

Kyle L. Snow,* Cornell University

This paper recounts the author's attempt to implement a collaborative learning design into a course on adolescent development;. Issues involved in planning such a course such as structuring assignments and evaluation of student performance are discussed and examples from the course are used to illustrate successes and failures in the design.

What's a Developmentalist to Do?

Judith Luis, St. Johns University, NY

We are living longer and our knowledge of human development across the life span is increasing daily. Teaching the life span course at such a time is a challenge. Decisions made in this course as to depth versus breadth can serve as a model for other courses with similar conflicts. The paper will present a strong case for depth and will invite and encourage audience discussion (and argument) of this point.

Session 2 4:15 - 5:30

Rm 1 Workshop: The Use of Role Playing Techniques Helps Students Understand Organizational Principles

Edward J. Murray & Carol A. Putoff-Murray, Kent State University, Ashtabula

Students generate role playing techniques which help students understand the complexities of group interactions and organizational principles. Various roles are created by students for the purpose of demonstrating organizational conflict, role complexity, and stress resolution.

Rm 2 Distance Learning in Psychology: Organizing, Managing, and Mentoring

Patricia A. Oswald,* Iona College, NY

Distance learning programs at Iona were developed for adult students who find it difficult to attend classes regularly on campus. Distance learning programs, in the form of video course, combine independent reading and guided study with viewing video programs. This presentation will discuss the organizing, managing, and mentoring processes involved in"teachin" video course. I will discuss strategies for enhancing student performance and assignments that can be used in assessing student competencies. To provide a flavor for the video programs, clips from several video course (Introductory, Developmental, Abnormal) will be shown.

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Within a Distance Education Context

Kenneth C. Elliott, University of Maine at Augusta, ME

Distance education has emerged as a radically new option for teaching and learning without being present on a college campus. This "virtual classroom" has caused both excitement and profound concern about the quality of academic courses and programs offered. This presentation will summarize these historical developments. One "interactive classroom" in Maine and the psychology courses taught at a distance will be described. Literature specifically addressing relevant academic standards will be noted and program development experience of UMA's Division of Social and Behavioral Sciences will be outlined. The perspective of students (both in the "live" and "remote" locations), instructors, and the department itself will be considered. Quality indicators for one psychology course (Human Development) will then be discussed and a continuing effort to define "best practices" will be shared. The audience will be invited to participate in discussing issues of accreditation , local course structure, and relative values with reference to traditional coursework options.

Rm 3

Stress and Self-Management or Theories of Personality: Blending Student Expectations with Core Topics

Diane J. Urban,* Westchester Community College, NY

In the current atmosphere, many elective courses are marketed to excite student interest; the actual core content may not meet their heightened expectations. In order to blend student expectation with core topics, students were afforded the opportunity to become "psychologists for a day." They were asked to analyze a typical personal problem of their choice from two theoretical perspectives. Such an assignment encourages them to check their assumptions about human behavior and delve more deeply into some of the topics only touched upon in class. This presentation will review how the theories and assignment were present to students; active participation of the audience will be encouraged and sample papers prepared by students will be shared.

Collaborative Test Taking: An Alternative Approach

Janice Rafalowski

County College of Morris, NJ

Haven't we all wrestled with the dilemma of how to cover course material and still promote active learning without sacrificing information. The challenge of integrating content with process will be discussed with a focus on collaborative test taking.

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*INDICATES SESSION CHAIRPERSON

Reception 6:00 - 7:00

Courtesy of McGraw Hill Publishing Co.

Dinner 7:00

Keynote Speaker: Robert S. Feldman

The Future is Now: New Approaches to the Teaching of Psychology

Courtesy of McGraw Hill Publishing Co.

Hospitality Room Following Dinner

Thursday, March 21, 1996

Breakfast 7:30 - 9:00

Session 3 9:00 - 10:30

Rm 1 Workshop: Beyond the Psychology Exhibition:
Adapting Exhibits for Classroom Use
Gretchen Jennings, American Psychological Association

At this roundtable discussion participants will view a 30 minute video tour of APA's traveling exhibition entitled "Psychology: Understanding Ourselves, Understanding Each Other." They will also have an opportunity to work with hands-on materials from the exhibition's 10 Discovery Units. Participants will be asked to comment on the materials and approaches found in the exhibition and to make suggestions for adapting the materials for classroom use.

Rm 2 The Bigger Picture: Context in the Research Methods Course
Susan M. Schneider, St. Mary's College of Maryland, MD

Students often learn the techniques of the research endeavor in their methods course without seeing how they function as a whole. An active learning exercise uses researchers' historical accounts of their research programs to provide this context, while at the same time offering an opportunity for review.

Teaching Concepts in Experimental Psychology through Journal Articles: A Technique that Works!

Susan K. Marell, *St. Thomas Aquinas College, NY

In this presentation, I will discuss teaching Experimental Psychology through the use of journal articles specifically keyed to each concept in the course. For each and every topic, students read two or three journal articles which clearly illustrate the concept being taught (e.g. independent vs. dependent variables, experimental vs. correlational research, operational definitions, reliability, validity, and ethical issues). Participants in this session will receive specific suggestions for journal articles which complement each concept taught in Experimental Psychology. The use of cooperative groups to enhance student learning in this course will also be addressed.

Using Behavior Therapy to Teach Research Methods

Barbara Dickson-Parnell, Neumann College, PA

An applied developmental model is used at Neumann College to teach research methodology. The focus is on decreasing student's anxiety by gradually exposing them to the "feared" stimulus. The first course in the series is designed to teach basic research concepts and designs and to decrease the frustration associated with reading and understanding journal articles. Each week journal and/or popular press articles are used to illustrate the week's topics (e.g. Tables, controls). Students are also expected to perform three mini-experiments (observation, survey, and single factor). The objectives of the second course is to design, conduct and write-up their own research by applying their knowledge from the first course. Lastly, the optional third course was designed at the students request for those who wanted to conduct a second study in their area of interest and/or prepare a manuscript for submission to a peer reviewed journal.

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Rm 3 Workshop: Facilitating Group Process in Collaborative Learning Activities

Tracey T. Manning, Sally N. Wall, The College of Notre Dame, MD

The shift in faculty role from lecturer/presenter to facilitator and consultant is often a stumbling block for faculty who want to effectively use collaborative learning activities. This workshop will model and mentor the faculty roles of facilitator and consultant. Participants will work in small groups on selected collaborative learning tasks and role-play common group-process problems. Workshop leaders will demonstrate and facilitate techniques for responding to such situations to foster active learning of course material.

Session 4 10:45 - 11:45

COFFEE, PUBLISHERS' DISPLAYS,

and

COMPUTER DEMONSTRATIONS/POSTER SESSION

1. Proposal for a Computer Aided Statistics Instruction Protocol (CASIP)

Ki-Young Rah & Michael Scuello, Brooklyn College of CUNY, NY

It is the authors' experience that students in introductory statistics courses tend to focus on rote calculations rather than the theories upon which statistical procedures were created. Using computer program modules to enhance lectures, the authors intend to create a class structure wherein calculations and rules could be easily obtained via computers. This permits more time for instructors to teach the underlying assumptions, characteristics and theories underlying each statistical test. Furthermore, through computer generated quizzing and mastery-style evaluation of student performance, the instructors could monitor class progress, and modify their teaching techniques accordingly.

2. Incorporating the World Wide Web into an Introductory Quantitative Research Methods Course

Nicholas H. Apostoleris, Clark University, MA

Students are introduced to the World Wide Web through a Web site devoted to class activities. Incorporated into the site are links to a variety of psychological Internet resources. The intention is for students both to become familiar with the WWW and other aspects of the Internet as well as to use these modern technologies to aid their own research projects.

3. Eye Lines Software: Not Just for Perception Anymore

Stephen Wurst, SUNY Oswego, NY

Eye Lines, software for conducting method of adjustment experiments on both PCs and Macintosh computers, has been used primarily for visual perception research and instruction. However, this software can be used in diverse areas such as motivation, cognition, social psychology, and personality. The applications in these various fields has increased with the release of version 2.0, which includes mirror drawing, rotary pursuit, and drawing/handwriting studies. These applications, and the need to examine software for its breadth of applications, will be discussed.

4.

Reading About It Isn't Like Doing It: IBM-Based Computer Packages Used In The Teaching of Psychology

Michael Gayle, SUNY at New Paltz, NY

The use of computer technology in the teaching of psychology has been steadily increasing. The author has compared and "field tested" several of the popular IBM-based instructional software packages. Advantages and disadvantages of several packages including MELLAB: Experiments in Perception, Cognition, Social Psychology and Human Factors, MEL Profession, Experimental Psychology Programs, Level I, Discovering Psychology Computer Simulations, and Psychology On A Disk V 4.0 are discussed.

5.

To T-Test or Not to T-Test--That is the Question: The Computer's Impact on the Psychological Statistics Curriculum

Zandra S. Gratz & Gloria M. Volpe, Kean College, NJ

Many studies have sought to confirm the positive effect of computers on the instruction and learning of psychological statistics. Results suggest that at the very least, computers do not appear to hamper instruction while at best, computers have been found to be an asset to student learning. The current paper proposes that it is now time to venture beyond studies of effectiveness and examine extent to which the content of psychological statistics courses should be revised to reflect the reliance of faculty and students on computer supported psychological statistics instruction.

6.

"...And the Punch Line is..."

Sid Hockman and Laura Sidorowicz
Nassau Community College, NY
POSTER SESSION

abstract?

Session 5 11:50 - 1:00

Rm 1 Workshop: Affective Education: Hands on

Creative Techniques for Teaching

Louise Cooper, Dutchess Community College, NY

Teachers are constantly beset with problems requiring creative and innovative solutions. The essence of creativity is the ability to be able to look at something which you see everyday from a new perspective. One of the hallmarks of good teaching is the ability to help students think and to solve old problems in new ways. This will be a participatory workshop where members will have the opportunity to learn and practice creative solutions to common teaching problems.

Rm 2

Roundtable: Teaching Child Psychology to Academically At-Risk Students

Libby Wyatt Ortiz, St. Thomas Aquinas College, NY

Child Psychology is a frequent course selection of college freshman who anticipate that it will be topical, and since it is about people younger than themselves, must not be too difficult. When faced with mastering ten to twelve chapters of textbook material, complete with topics such as "transductive logic," "primary and secondary circular reactions," and "genetic canalization," many are truly overwhelmed. This is a particular problem in colleges with minimal admissions standards. What can instructors do to involve these students in active learning, while maintaining academic integrity? Discussants at this round table will review appropriate learning outcomes for an introductory child psychology course, and share successful activities for reaching those outcomes. Participants are encouraged to bring course outlines to distribute, suggestions for accessible textbooks, and lists of meaningful multi-media resources. All those attending will have an opportunity to share in creative solutions to the dilemma of trying to teach students who want to learn, but lack the academic prerequisites necessary for mastering a heavy text with unfamiliar terminology.

Rm 3

Teaching a Test and Measurement Course by Developing a Measurement Instrument

Margaret D. Anderson,* SUNY College at Cortland, NY

Courses in Test and Measurement offer a good example of the difficulty in balancing wide-ranging coverage of core material with focused experiences that optimize familiarity with the material. A design is described which reconciles this breadth-versus-depth dichotomy with a two-phase presentation of material plus a unifying group project. students are first introduced to the major concepts in test construction and evaluation, then they apply these concepts to several examples of psychological measurement. Concurrently the students are using what they learn to design, construct, administer and evaluate their own measure of cognitive processing. This active collaborative project allows students to fully synthesize the material introduced in the course.

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Content vs. Process: Learning Scaling by Doing Scaling
George C. Fago, Ursinus College, PA

To develop competency in the construction, use, and interpretation of psychometric scales demands a familiarity with both process and content. In terms of content, students must understand psychometric concepts including types of measurement scales and theoretical approaches to psychometric scaling. A familiarity with the construction process in necessary for students to understand how the concepts underlying Thurstone and Likert Scales, for example, are operationalized. An interactive, computer-assisted teaching method is described whereby students participate evaluating validity and developing scoring protocols.

Lunch 1:00 - 3:00

Keynote Speaker: Dennis Coon

Psychology's One Thousand Most Important Concepts (and How to Cover Them in One Course)

Courtesy of West Publishing Company

Session 6: 3:30 - 5:00

Rm 1 Roundtable: Human Development or Developmental Psychology--
That is the Question
Julie Guay-McIntyre, Leslie Grout, Sybillyn H. Jennings, & Jean E. Poppei,
Russell Sage College, NY

A panel of developmental psychologists who teach in various contexts will address the tensions generated as course content is driven by program needs. Content emphases change as the development course changes from the context of liberal arts to that of professional training, such as in education, nursing, or physical therapy. Depending on the course objectives, the course may emphasize practical applications or theoretical underpinnings, personal experience or research findings, qualitative or quantitative data. The constant struggle to maintain a content balance is matched by pedagogical concerns.

Rm 2 Changing Multicultural Students' Self Efficacy Expectations
Via Critical Thinking Exercises
Jerald Cilente, Middlesex County College, NJ

Small group exercises designed to enhance academic materials and drop out rates in an introductory psychology class for psychology majors and non-psychology majors.

Teaching a Psychology Course About Prejudice and Racism: A Team Teaching Experience

Sharon Boyd-Jackson* & Emily K. Filardo, Kean College, NJ

This presentation will describe the development of a psychology course on prejudice and racism, team taught by an African American and a Jewish-Italian American professor. It will discuss how the course was conceived and developed, its content, teaching methods, and student reactions to the course, as well as issues involved in the team-teaching process.

Teaching of Culture and Ethnicity in Psychology: Students' Current Challenges and Future Needs

Anatasia S. Kim & Raichelle Jordan, University of California at Berkeley, CA

The objective of this presentation is three-fold. Firstly, we will describe a special project that was undertaken by the Psychology Department at the University of California at Berkeley in the Fall of 1993 entitled "Culture, Ethnicity, and Mental Health." Secondly, we will relay how this project brought about a major impetus for change in Berkeley's Psychology Department with students serving as the main driving force behind this development. Finally, we will propose a need for a revolution in undergraduate academic training in psychology in order to meet the challenges and needs of cultural/ethnic diversity in academia and community.

Rm 3 The Road to Understanding the Self is Paved with Yellow Bricks

Jeffrey B. Adams* & Caterina Eppolito, St. Michael's College, VT

It is an easy task to attract students to a course on the social psychological study of the self thanks to the topic's inherent appeal. However, maintain interest through coverage of the complex and highly empirical concepts of the area can be a struggle. This presentation discusses one exercise developed to maintain student involvement while increasing their understanding of the course material. The exercise is built upon treating the classic story, "The Wizard of Oz" as a metaphor for the self.

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Depth by Doing: Cooperative Research Projects in Social Psychology

Karen O'Quin, SUNY College at Buffalo, NY

Students worked together in groups of 3-5 to develop hypotheses, design simple correlational studies, and interpret results; they also wrote two individual papers. I will provide copies of the explanatory handouts and grading forms. At the end of the semester, 30 female and 11 male students rated their own and other members' contributions to the group project; correlations showed that ratings of group members' contributions were significantly positively related to perceived fun, clarity, understandability, contribution to learning, and willingness to recommend the project to other students. However, the experience of having a "bad" group member yielded poorer ratings for the project. Students also commented that they gained a greater depth of understanding of the research process, even from such a simple project, by seeing it through from start to finish.

Reception 6:00 - 7:00

Courtesy of West Publishing Company

Dinner 7:00

Hospitality Room Following Dinner

Friday, March 22, 1996

Breakfast 7:30- 9:30

Session 7: 9:30 - 11:00

Rm 1 Workshop: Content and Process, Depth and Breadth: How to Have it all (sometimes anyway)
Robert A. Bernstein, & Liane Summerfield, Marymount University, VA

This presentation will focus on how to use topics that we are most interested in as a way to not only convey information to our students, but as a way to model learning process and intellectual involvement. It will focus on ways to make our presentations more relevant for our students and discuss methods to integrate our interpersonal and teaching skills.

Rm 2 Teaching the History of Psychology in Context or Depth Without Breadth Leads to "Shallow" Learning
Howard M. Reid* & John B. Morganti, State University College at Buffalo, NY

This presentation reports an effort to modify the History and Systems of Psychology course so that a social, political and disciplinary context is prominently provided throughout the semester. This approach grew out of an examination of the extent to which History and Systems texts provided breadth versus depth for five significant events/movements. It was found that, with the exception of Freud and the birth of Psychoanalysis, the texts concentrated upon psychological antecedents at the expense of broader social and philosophical influences. The negative consequences of this inward orientation, as well as the specific pedagogical benefits or steps being taken to counteract this narrow interpretation, are discussed.

Engaging Students in Large Lecture Classes
Gail Martino, Colgate University, NY & Fabio Sala, Boston University, MA

Throughout the semester students in a large lecture class (200 students) were called upon at random to answer critical thinking questions and issues raised during class lecture and discussion. Students evaluated this technique through a survey which attempted to assess whether calling on students at random provided a smaller, more intimate classroom setting. The most effective style of questioning is discussed in terms of increasing students' intrinsic motivation and engagement.

Nontraditional Students : A Teaching and Research Perspective
William R. Balch, Penn State University, Altoona, PA

Nontraditional learners (i.e., adult, or returning students) are discussed in terms of both a research and teaching perspective. Regarding research on nontraditional (vs. younger traditional) students, issues considered will be independence, academic performance, well-roundedness and personality. With respect to teaching, several perspectives on teaching adult students will be proposed and evaluated, including "mainstreaming" (teaching traditional and nontraditional students together and in the same way), "separatist" (organizing separate adult classes) and "bipolar" (teaching traditional and nontraditional students together, with consideration for differences in learning styles between the two groups.

Coffee Break

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Session 8: 11:20 - 12:50

Rm 1 Workshop: Review of Undergraduate Psychology Curriculum: Issues of Content, Process, Depth and Breadth
John Chan, Dominican College, NY

A workshop based on two years of experience in a psychology program review. The presentation consists of four parts: (a) perspectives and strategies, (b) methods of review and assessment, (c) area of interest and concern, and (d) recommendations for responsive curricular development which focuses on issues of content, process, depth and breadth.

Rm 2 TQM in Class: From Disaster to Success in Essay Exams in

Introductory Psychology

Choichiro Yatani,* SUNY College of Technology at Alfred, NY

Admitting its controversial aspects, the author applied some principles of Total Quality Management (TQM) to his introductory psychology classes in a two-year college of technology in western New York. His four-year practice produced the distinctive and consistent changes in the students successful study behavior and improvement of their grades. The presentation also discusses the issue of "good vs. bad multiple-choice exams" and its fallacy.

A Writing Workshop for Sophomores

Suzanne M. Phillips, University of Pittsburgh at Johnstown, PA

Sophomores in personality theories courses develop writing skills by reading and evaluating each others' papers. Because these papers are reactions to course content, the workshop is a way for students to explore course content by reading the perspective of others. The presentation will focus on how the workshop is organized; sample papers with student comments will be provided to illustrate the process.

Lunch 1:00

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*INDICATES SESSION CHAIRPERSON

CONFERENCE COMMITTEE
Gene Indenbaum, Chairperson
David Griese'
Michael Hackett
Barbara Sarringer, Executive Assistant

The Costs and Benefits of Critical Thinking

by

Randall E. Osborne, Judy Laws, Ken Weadick & Vicki Mantooth
Indiana University East

The Costs and Benefits of Critical Thinking

by

Randall E. Osborne, Judy Laws, Ken Weadick & Vicki Mantooth

Indiana University East

Abstract

This activity can be used with small to medium size classes (up to about 50), although the ideal size would be between 15-35. No prior understanding of critical thinking is necessary although the demonstration should be prefaced with information about critical thinking that the students can use as they work in groups. A 75 minute class period is preferred but this could be adapted for two shorter periods. The demonstration is effective for fostering group work, encouraging critical thinking, and understanding the costs and benefits of being a critical thinker.

Concept

This activity demonstrates the relationship between the amount of effort that is spent (illustrated in this activity as money) and the benefits gained in terms of critical thinking (illustrated in this activity as assignment points earned). This is accomplished by allowing student groups to purchase information about a case and then using the information purchased to present a critical analysis of the case to the class. Students earn assignment points for how much money they have left and how "sophisticated" the judges rate their analyses to be.

Materials Needed

A summary of Bloom's (1956) taxonomy of educational objectives (included at the end of this activity), Enough Monopoly (or play) money for each group to have $240.00, and additional case information that groups can purchase. Each piece of information is written on a notecard and stacked according to monetary value, either $25, $40, or $75, (sample lists are included at the end of this activity).

Instructions

The instructor will need to prepare and present a brief lecture on Bloom's taxonomy. Make sure that students understand each of the cognitive objectives. After students understand these objectives, they should be related to critical thinkers. The discussion should center on the fact that a critical thinker goes beyond the simple facts (knowledge), makes it a point to know the meaning of the information (comprehension), can generalize the knowledge (application), is able to break the information down into subparts and recognize how those subparts might interrelate (analysis), can put the information back together into a form that now has more meaning (synthesis) and can critically evaluate the strengths and weaknesses of the conclusions drawn (evaluation).

Students are now read a short case history about Rick, a man who climbed a tower and shot and killed or wounded multiple persons.

The following case information is read to the class:

"On April 1, 1988 Rick Donlan took a sniper rifle, and climbed to the top of a clock tower on the campus of a major University in the United States. Slowly, over the next four hours, he killed and wounded many students before a SWAT team stormed the tower and Rick, himself, was killed."

Each group is then given the following four pieces of information about the case free:

1.) He killed 14 persons and wounded 11
2.) He had a protruding forehead

3.) His favorite movies were Jean Claude Van Damme movies
4.) His favorite magazine was Guns & Ammo

They are instructed that additional information about the case and Rick's history can be purchased from the instructor. There are three cost categories ($25, $40 & $75) of information (and students are told that the more expensive the information the more informative it will be).

Students are then given 30 minutes to devise a strategy for purchasing information, analyzing that information and preparing a presentation for the class on why they think Rick did what he did. Since there are fewer pieces of highly informative ($75) information than the amount of money would allow groups to buy, the information is sold on a first come, first serve basis. This motivates groups to develop their purchase strategies quickly and to use the rest of the time to use that information to develop their analyses. At the end of the 30 minutes, groups make brief (3-5 minute) presentations to the class (and a panel of student judges I bring in as volunteers from other classes) about why they think Rick committed these murders.

Students are told that they will earn assignment points based on money left over and the judges rating of how well they used Bloom's objectives in building their case. (If you have 5 groups, the group with the most money receives 5 points, then the next highest amount of leftover money receives 4 points, and so on). The groups also earn points for the judges' ratings of their analyses (with 5 groups 5 points for the best analysis, 4 points for the second best analysis, and so on). Although any number of groups could be used, too many groups mean too few pieces of information can be bought and can inhibit sophisticated use of the information. It is better to have fewer groups (even though they will be larger) because analyses will be more sophisticated and there will be fewer presentations to listen to.

A few important things to note for the students:

1.) Once a piece of information is bought, no other group can buy the same information.

2.) They must present the cards with the information they purchased to the judges before making their presentation (this allows the judges to determine whether the students are drawing conclusions that go beyond their data, etc.)

3.) They can use information from the textbook and lecture to support their arguments. (If they discover, for example, that Rick had severe damage to his Amygdala, they may turn to their text and discover that the Amygdala has been linked to aggression and fear).

Students are told that it is important for them to be able to present an argument that demonstrates all of Bloom's cognitive objectives (i.e., they must "apply" textbook and lecture information to the current situation). Since educators are encouraged to teach to these skills, it would be valuable for students to use those same objectives in doing their work. It is quickly obvious to students that their is a relationship between the cost of doing critical thinking (in this case spending more money to gather more information and evidence) and the benefits reaped (in this case a higher rating of their analysis leading to more points).

Discussion

After the students have made their short presentations to the the class, the judges retire to the hallway and reach their decisions about the "sophistication" of the groups' analyses. We provide the judges with a list and description of Bloom's objectives and the students give the judges a written summary of their analysis for them to use in their considerations.

Once the judges have made their decisions and groups have tallied their points (remember they will earn at least one assignment point for amount of money left over even if they have none and at least one point for their analysis) we focus the discussion on critical thinking.

An example of the connection between Bloom's levels is used to illustrate to the students the difference between "thinking" and "critical thinking". A thinker might simply repeat the facts purchased from the cards (demonstrating the "knowledge" level of Bloom's taxonomy) whereas, a critical thinker would take that information and explain what those facts mean (at least taking the information to the "comprehension" level of Bloom's taxonomy).

The costs of critical thinking include:

- more time consuming
- requires acquisition of more information
- may reveal one's own biases and assumptions

The benefits of critical thinking include:

- more sophisticated analyses of information
- more flexibility in thinking
- use of more logical inferences
- more rational conclusions based on an examination of evidence

Discussion about this activity is usually quite animated and student feedback about it has been overwhelmingly positive. Since the students are earning assignment points just for trying, it is also a very non-threatening way to encourage them to use their critical thinking skills, to draw connections between pieces of information, to use their lecture notes and textbooks as supplemental resources, and encourage groups to brainstorm. We use this demonstration in Introductory Psychology courses but, by varying the scenario, it could fit into virtually any course and any topic.

Writing Component

Since we build our discussion of critical thinking around effective thinking and communication, important components of this activity are the oral presentation and the written analysis that groups turn in. The judges use these written analyses, in part, in judging the sophistication of the group's analysis. Students are reminded to reflect Bloom's cognitive objectives in both their oral presentations and the written summaries they turn in. It is important to note that the written analyses and oral presentations are not graded. Since the major goal of the activity is to demonstrate the connection between the costs and benefits of critical thinking, students earn assignment points for their efforts.

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Bloom's Objectives

Knowledge = Specific facts

Comprehension = Understanding of those facts

Application = Can generalize those facts to other situations

Analysis = Can break problem down, recognize connections between subparts

Synthesis = Can assemble parts into a more meaningful whole

Evaluation = Critically uses information to make (reasonable) judgments

$25.00 Information

He was single and has never been married

He was 38 years old

He was a Security Guard at an Avon Factory

His Mother Had Blonde Hair

He was the Oldest of Nine Children

He is Shy

He Prefers to be Alone

He Often Saw "Puppies" in Rorschach Inkblots

He Had Rubella When he was 4 Years Old

He Was Allergic to Penicillin

His Father Was an Alcoholic

He Placed First in his Fourth Grade Science Fair With a Project on Electricity in the Home

He Was the Youngest of Three Children (he had two older brothers)

His Mother Occasionally Worked as an Exotic Dancer (but only when they really needed the money)

His First Car was a Beat-up, Black, Ford Pinto

$40.00 Information

When He Was Little His Mother Sometimes Dressed Him Like a Girl

Of the 14 People he Killed, 9 Were Women

He Sometimes Suffered From Severe Migraines

The Morning of the Murders He Suffered 3 Blackouts

Twice as a Child he Was Evaluated by Psychiatrists

He Was an Ex-Marine Who Hates Country Music

He Was an Expert Marksman Who Practiced on the Firing Range

He Flunked Out of Medical School

He Meticulously Stands His Rolled Pairs of Socks on End in the Sock Drawer by Color

His Father Died in a Freak Accident When Rick Was 14 Years Old

Early IQ and Achievement Tests Suggested Competency Well Beyond his Level of Performance

Getting a Driver's License was Delayed Until 18 Years of Age Because he Was Caught Joy Riding in a Stolen Car at Age 15.

Despite Extremely Poor Attendance and What Teachers Labeled as Lack of Motivation, He Graduated High School in the Top 15% of his Class

$75.00 Information

At The Age of 7, He Skinned His Cocker Spaniel Alive

He Was Repeatedly Molested by a Mentally Retarded Uncle. An Incident Which was Covered up and Denied by the Few Family Members Who Knew About it.

He Was Passed Over 4 Times For a Promotion at the Post Office

He Bred Doberman Puppies as a Hobby

He Often Took His Female Dates to See Dogfights

His Only True Love Left Him for a Singer in a Country Band

He Has "Macho Man" Tattooed on his Left Forearm

He Was Hearing Voices Telling Him to Kill

He Was Hospitalized Twice Because of Seizures

All the Women He Killed Had Blonde Hair

He Left a Note Behind Saying, "This is The Only Way I Could Stop The Voices"

An Autopsy Revealed Major Damage to his Amygdala

What's a Developmentalist to Do?

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In his book *Opus 100*, Isaac Asimov wrote that he was not an expert on anything except on sounding like an expert. When he wrote a book, he explained, he put everything he learned about the topic into the book and then moved on to another topic and another book. He claimed he could not answer additional questions on the book's topic because he didn't know "anything but the exact words in the book".

It is likely that he was being modest, given his astonishing range of subject matter. However, this disclaimer brings up the interesting question of what it means to know something. Is what he said really possible? Is it possible to know something only so far and no more? Don't we use what we know to go farther -- to explore, guess, hypothesize, theorize? For example, don't we use the context of words we know to understand new words? If so, then there is no end point to a piece of information, it is not a discrete unit, it flows into new pieces of information. Further, the question of what it means to know, the act of knowing, leads to the question of what it is we actually know.

Does knowing something happen when we know a lot of facts? Or does knowing something happen when we understand one fact so well that we can carry that knowledge over to new situations? Is it sheer acquisition of information -- or is it understanding and the ability to think?

Ideally, it is both. But as college professors, we live and work in less-than-ideal worlds. And we must decide what our job description is, what it is we seek to do in the classroom. It may be popular these days to argue for "thinking" over "facts", but the reality is that psychology students need some facts, if only to use as a base for their own work in psychology.

The field of developmental psychology has a lot of facts in it, as well as a lot of theories and new ideas. Textbooks in developmental psychology keep expanding, spongelike, to accommodate these innovations. Teaching developmental psychology has become a challenge because one must decide which facts to include and which to exclude, usually in the interest of time. A fifteen week semester is never long enough to cover everything. What's a developmentalist to do? Go for breadth? Or go for depth?

Breadth versus depth -- two words which are difficult to define (and difficult to pronounce!) -- but I offer this: Breadth is a passing acquaintance with many facts on a shallow level, and depth is the understanding of a concept on a deeper level. Every section of the developmental psychology curriculum can be a course in itself, and usually is a course in itself at upper level and graduate level courses. We at the undergraduate level often tell ourselves not to expect to teach any topic in depth; we say "if they're interested enough they'll go on to grad school and learn it there, or they'll get a book and find out on their own. After all, doesn't the best learning happen when one teaches self?" In saying these things, however, we may be doing a disservice to the student and shortchanging ourselves of some rich experiences. Why would a student ever be interested enough in any topic to pursue it further if their initial exposure to it is rushed, incomplete, or confusing? We need to remind ourselves that even though we have heard these topics before, they are brand-new to the students and require some time to be absorbed.

I'm sure we all have had the experience of teaching some fact which is simple to us only to have a student ask a question which reveals how little he or she actually understood of what we just said. Although that may happen because the student was not paying attention or our explanation was not clear enough, the incident should serve as a reminder of how much a learner must work to take in something never seen before. Any extra presentation time and technique helps the learner in this process. There is only time to do this if the teacher and learner are not rushed. So even though I said before that students do need to learn some facts, it might be apparent by now that I favor depth over breadth.

What's this developmentalist to do? Argue for depth. In arguing for depth instead of breadth, consider the advantages of depth. Although fewer topics are learned over the semester, they are learned in detail. Even if all the detail is not retained, it is likely that enough will be remembered to leave the student with a sense of mastery.

Developmentalists like that word "mastery", but we didn't invent it. Remember the saying (or something like it) "give a man bread and you feed him for a day; teach him to grow wheat and he feeds himself for a lifetime"? That's mastery. The mastery which comes from depth gives us the ability and freedom to take charge of our own learning. An example of this can be found in cooking. The sauce known as Béchamel sauce (or white sauce) has four ingredients and four steps in its preparation. It is the base for many other food dishes and lends itself to creative cookery. If one knows how to make this sauce and understands its properties, there is no need to refer to a cookbook or memorize other recipes. The knowledge of how to make, to use, and to apply this sauce will transfer to other cooking situations.

Developmental psychology is not a cooking class, but so many of its topics can be the "white sauce". The topic of conception is one such case. Conception is a standard kick-off in developmental courses. It can be taught as straight biology and then one moves on or it can be taught as biology and then the technological advances can be introduced, from in vitro to microdrilling. This usually leads to discussion of the consequences of these advances and the possible combinations of alternative methods of conception. From there, infertility, life-style, and other issues can be raised. Conception comes to be viewed in a broader context, the students relate it to real life, and it is likely they will retain more of it because of this in-depth, relevant, and elaborated treatment.

What then? If the knowledge base is firm, it can become the foundation for additional knowledge as material transfers from one area to another. All the technical information learned from conception lectures will move nicely into biology classes. The other issues transfer well to classes in ethics, philosophy, sociology, and theology. The student feels more confident discussing these issues when they have command of the facts, if they "know" the facts well enough.

What is being done here? How can depth be conveyed? Perhaps it is through the following:

1. establish the underlying or basic concept
2. convey the concept clearly, preferably through some active exercise
3. let the student take over, apply the concept to real life, find the exceptions to it, expand it to new areas

If this method is used, some topics may have to be sacrificed, but when there is less pressure to cover breadth, there is more time for demonstrations, films, interactive sessions -- in short, active learning. So much attention has been devoted to this concept in recent years that we cannot escape its influence. One good active exercise in class may be more memorable than ten lectures, particularly for the visual learner in all of us. It may be the thing that is carried away from the class and remembered years later.

How can teachers know which topics to cover in depth? William James advised teachers to start where the learner is and proceed from there, and the class itself can be a good place to start. A question from a student can unexpectedly trigger a barrage of related questions and the decision must be made on the spot -- keep going with the lesson as planned, or go with these questions and let students know they have some control over their education. Even if the students do not ask to focus on a topic, considering them as a group with certain characteristics can be useful. For example, students who have backgrounds in criminal justice will be more interested in childhood origins of antisocial behavior, while students with backgrounds in nursing will want more coverage of health and physical development issues. Again, if there is mastery, there will be transfer and a more educated student.

A student who is academically underprepared may drown in a course which emphasizes breadth. A similar fate may befall a student with learning disabilities. A teacher who provides standard (shallow) coverage of a wide range of topics may fall into a habit of teaching only those topics and lose flexibility and adaptability to students' requests. Such a pattern can lead to (heavens!) "teaching for the test".

Finally, it is possible that the desired critical thinking skills we strive for throughout education can be developed by in-depth coverage of a topic. When we are studying something in depth, we are learning and thinking about the issue from several sides and this exposure fosters divergent thinking, a skill that will be used in other situations. It encourages the learner to accept the idea that there may not be one correct answer to a problem, that analysis of a situation and successful solution to a puzzle will be helped by in-depth, thoughtful knowledge of the pieces involved.

The Use of Role Playing Techniques Helps Students Understand Organizational Principles

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ABSTRACT

Students generate role playing techniques which help students understand the complexities of group interactions and organizational principles. Various roles are created by students for the purpose of demonstrating organizational conflict, role complexity, and stress resolution.

WORKSHOP

Title: The Use of Role Playing Techniques Helps Students Understand Organizational Principles

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Role playing procedures have contributed effectively to self awareness through psychodrama and assertiveness through behavioral techniques. These processes were introduced into an Organizational Psychology class to help students comprehend the principles of group process and the complexity of human communications.

The theoretical course materials focused on various organizational elements. The effective interaction between the environment and the organization received primary emphasis. The internal aspects of the organization examined leadership, power, management, communications, conflict, and goals. The structure of the organization and the philosophical visions created in the organization a climate conducive to flexibility or an atmosphere of stress. The final relationship concentrated on the individual and the organization with a strong emphasis on motivations and healthy adjustment.

The students received instruction concerning role playing. They were expected to apply the theoretical principles to practical role playing situations. The role playing climates integrated in a practical manner the theoretical principles. The students achieved critical thinking. Their use of problem solving skills enhanced their decision making abilities in a simulated environment.

This workshop exposed the participants to a variety of roles played within groups. All of the participants had an opportunity to both role play and observe others in the process. Most of the role playing focused on intragroup conflict with suggestions from the observers about the resolution of these conflicts.

One clinical scene examined a parent-adolescent conflict. The technique used was the procedure of "broken record."

The participants provided feedback which suggested that theoretical models and the practical experiences were integrated in an effective manner.

During the past year, the presenters received three telephone calls from participants. These calls requested advice and direction concerning role playing activities.

Distance Learning in Psychology: Organizing, Managing, and Mentoring

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Abstract

Distance learning programs at Iona were developed for adult students who find it difficult to attend classes regularly on the campus. Distance learning programs, in the form of video courses, combine independent reading and guided study with viewing video programs. Psychology courses that are offered in the video format include Introductory, Developmental, Abnormal and Statistics. This paper addresses the organizing, managing, and mentoring processes involved in "teaching" video courses. I discuss student characteristics, strategies for enhancing student performance, and assignments that can be used in assessing student competencies.

Distance Learning in Psychology: Organizing, Managing, and Mentoring

Distance learning programs provide students with the option of completing college courses without regularly scheduled classroom sessions. Typically, students are drawn from the growing population of adults who want to complete a college degree but who are precluded from a traditional course of study. Video distance learning courses combine independent reading, guided study, video program viewing, and faculty mentoring to provide a challenging learning experience for students. These courses replace the campus classroom as the primary place of instruction.

This paper discusses the organizing, managing, and mentoring processes involved in "teaching" video courses. Specifically, I address (a) the type of student who is likely to be successful as a distant learner; (b) choosing a text and study guide to accompany the video programs; (c) designing assignments and assessing competencies; and (d) encouraging the mentoring process. I also provide details regarding specific video courses that I have taught.

Distance Learning at Iona

Iona developed video courses for those adult students who find it difficult to attend classes regularly: persons who live far from the campus, parents caring for young children, workers with irregular schedules, and disabled individuals. Psychology courses offered in this format include: Discovering Psychology (Introductory), The World of Abnormal Psychology, Seasons of Life (Developmental), and Against All Odds (Statistics). These programs are produced by the Annenberg/CPB Project. Video courses are quite popular--we offer at least one video psychology course in the Fall, Spring, and Summer sessions. Course enrollments typically number in the 20-30 range.

Student Characteristics

"Distance learning in general requires mature students with specific needs" (Moore, 1993, p. 172). Our adult "non-traditional" students who enroll in video courses are typically in their mid-30s or older and are working full-time. All students must have completed some college course work and have good academic standing before being permitted to take a video course. Because these courses require extensive self-paced reading, note taking, and studying, students who are organized, motivated, self-directed learners do best.

Course Specifics

Video broadens instruction by making real events present, it communicates visually, it shows rather than tells (Zigerell, 1991). Video courses enrich the learning experience by highlighting and providing interpretation and analysis of course material. Video programs include: location shooting; real case studies; commentary from teachers, researchers, and clinicians; and animated graphics. The case studies provide depth to the Abnormal course and the graphics are particularly helpful in the Statistics course.

Video courses carry four credits and can be used for major or elective credit. Students are required to come to campus three times during the semester: to attend an organizational meeting and to take the midterm and final exams. Optional class meetings occur three times during the semester and include discussion sessions and exam review sessions. Students rent the video programs for the term (approximate cost = $50.) or view them on reserve in our library.

Text and Study Guide

For each course, the faculty mentor can choose from among several text and study guide options that are suggested by the creators of the video series. It is essential that students use a study guide that coordinates the text and the video programs. Coordinating study guides typically include the following sections for each unit: (a) lesson **overview**; (b) lesson **objectives**; (c)lesson **focus questions**; (d) related **case studies**; (e) **interactive questions** bringing together the text and videos; (f) **self-test** multiple choice, short answer, and essay questions; (g) **glossary** of important terms; and (h) supplementary **reading list**.

Structure of the Course

It is important to provide a detailed syllabus. Beyond the usual information, the syllabus should include specific strategies for approaching the course and a brief description of each unit. The syllabus should also include instructions that guide students to do the following: (a) review the study guide, (b) view the videos and take notes, (c) read the text and take notes, (d) do the study guide exercises, (e) make contact with the instructor, and (f) study with a group. Although these instructions seem obvious, students usually do not know where to begin or how to proceed without these guidelines. I also include information on forming a study group (e.g., I suggest that they exchange phone numbers with at least one other person).

At the initial organizational meeting, I provide an outline of learning objectives for each unit of study, including both process and content objectives. I describe fully the course assignments. I discuss strategies for working at home, for example, taking breaks, dealing with distractions, and handling interruptions. I obtain their addresses and work and home telephone numbers to create a mailing/contact list. Finally, I clarify my "teacher" role as that of mentor by explaining that I will guide their learning rather than present material in the form of lectures.

Assignments and Competencies

"Students . . . learn by *constructing* their understanding through interpreting present experiences and integrating them with their existing understanding of their world" (Moore, 1993, p. 173). In keeping with this notion, I designed assignments that encourage students to:

- process, integrate, and synthesize course information,
- present their conclusions clearly,
- hone their writing skills; and
- develop research competencies.

This can be achieved, for example, by having students (a) answer thought-provoking case study questions, (b) identify questions that they have on specific topics and then do the necessary research to answer their own questions, (c) write reaction/research papers, and (d) complete exams. I urge students to consider opposite points of view from what is presented in the videos and text to test the merit of those ideas. I encourage them to make use of new technology (e.g., E-mail, fax) for delivering and returning assignments when possible.

The Mentoring Process

Ideas to consider:

"Teachers will evolve from lecturers to managers . . . of learning resources" (Murray, 1996, p. 40).

"Within this [video] environment, the teacher serves more as a consultant and moderator than as a presenter . . . " (Moore, 1993, p.173).

"To learn to think conceptually, a student needs to interact with another human being who can respond to his [or her] conceptualizations critically and helpfully" (McKeachie & Kulik, 1975).

To foster the mentoring process, I plan a regular schedule of student-faculty contact through telephone conversations, written correspondence, and E-mail interaction. If students do not contact me as scheduled, I contact them. During these contacts, I try to encourage the interactive, exploratory, questioning behavior that is essential to learning.

I give feedback to students early and often. The first written assignment is due the third week of the term. Each student receives detailed written feedback from me on the first and subsequent assignments. I provide a context to help students assess their work, for example by giving them information in the form of grouped frequency distributions for grades earned by the entire class on various assignments and exams.

Summary and Conclusions

Some " . . . educators are wary . . . because they foresee a loss of 'the human factor' in learning interactions" (Murray, 1996, p. 41). Those of us who choose to teach video courses must be aware that some of our colleagues will question the legitimacy and efficacy of video instruction. Additionally, some students who take video courses dislike the format. However, only a small percentage of my students report feeling his way and this number can be reduced by careful pre-registration advisement. Although these courses are not for everyone, many students evaluate them quite favorably and register for all four video courses that we offer.

Despite the concerns that some may have, there are advantages to video instruction. One-on-one contact between student and teacher is typically greater in video courses. For adult students, who rate one-on-one contact with faculty higher than younger students (Rosenthal, Folse, & Alleman, 1996), this is a plus. Distance learning can be less expensive for students because they can continue to work and earn, and they may have fewer child-care and travel-related expenses. Moreover, video courses provide a challenging learning experience for adult students while accommodating their scheduling needs.

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Conferences & Other Resources

1996 Adult Continuing Higher Education (ACHE) Conference is on Distance Education.

Annenberg/Corporation for Public Broadcasting Project, creators of several college-level telecourses. 1-800-LEARNER.

International University Consortium. The University of Maryland. 301-985-7811.

The Quest for Respect: Quality Within A Distance Education Context

A Paper Presented on March 20, 1996
At the Teaching of Psychology Conference
Sponsored by SUNY Farmingdale

by Kenneth C. Elliott Ph.D.
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INTRODUCTION:

First. I would like to express my gratitude for both the chance to present here. It is the first time that I have attended this annual conference and I am delighted that such a fine forum is made possible. Also I appreciate very much your coming to hear my remarks about developing and teaching undergraduate psychology courses within the Distance Education context.

"Distance Education", if you have not already been introduced, is an entity about which we will all hear much about in the very near future. My own awareness of it began in 1991 when I returned to a full time academic position from the clinical world. At that time, as a new faculty member I was asked to develop a new course, Psychosocial Rehabilitation, for "ITV". Well, the Annenberg grant that accompanied this request was enticing and I had developed several face to face courses in the past. So, I took the assignment on. Little did I realize what I had taken on! In speaking with my colleagues at the time, I soon came to label this assignment as "meeting the elephant sneaking into our backyard". The elephant was and is "distance education".

Today I want to take this opportunity FIRST to get on a soap box and share with you my current conceptual understanding Distance Education. Then I want to get down off my soap box and briefly give an overview of our "current practices" at the University of Maine at Augusta. Finally, I want to share with you a few brief remarks about the matter of course evaluation practices and program accreditation within this context.

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What, in 1996, is Distance Education? How can it be usefully conceptualized for the purposes of developing courses and teaching practices? Historically, distance education has referred correspondence courses dating back to the last century in America. For most of this century, distance education remained a "stable paradigm" and continued to rely upon what we now refer to as "snail mail" or the transporting of documentation via non electronic means. Since that appearance of video tapes in the past thirty five years, a new dimension was added to this model but the paradigm was essentially unchanged. And applications of these teaching and learning methods were limited primarily to military correspondence courses, home schooling and the like.

Since the 1970s, distance education has been profoundly changing, both in terms of methods and applications. The developments in telecommunications and information processing technologies have made possible a whole new SPECTRUM of teaching and learning opportunities. And, perhaps more importantly, these developments have led us to a profound challenge. The elephant meets the academic. Today, "distance" does continue to signify a physical separation of the student from campus, from psychology teachers and from the institutional center from which a program originates. However, "Distance education" in 1996, is evidenced by literally hundreds of programs and courses, both accredited and nonaccredited, which are offered worldwide through electronic media. These are both "real time" courses and "assynchronous courses". "Real time" signifies a simultaneous participation of student and instructor. "Assynchronous courses" refers to those courses which a student can participate in a any time of their choosing.

To indicate the magnitude of this challenge, let me read to you from a recent October 1995 submission to the Policy Forum of ***Science*** magazine. Dr. Eli Noam, a professor of Finance and Economics and Director of Columbia University's Institute for Tele-information within the Graduate School, entitled his work "Electronics and the Dim Future of the University". In it, first he review the cultural history and functions of a traditional university in terms of three basic missions; the development, storage and transmission of information within a society. He writes;

> The third function of the university is the transmission of information its teaching role. It is hard to imagine that the present low-tech lecture system will survive. Student-teacher interaction is already under stress as a result of the widening gulf between basic teaching and specialized research. And the interaction also comes with a big price tag. If alternative instructional technologies and credentialing systems can be devised, these will be a migration away from classic campus-based higher education. The tools for alternatives could be video servers with stored lectures by outstanding scholars, electronic access to interactive reading materials and study exercises, electronic interactivity with faculty and teaching assistants, hypertextbooks and new forms of experiencing knowledge, video and computer conferencing, and language translation programs. While it is true that the advantages of electronic forms of instruction have sometimes been absurdly exaggerated, the point is not that they are superior to face-to-face teaching (though the latter is often romanticized), but that they can be provided at dramatically lower cost. A curriculum, once created, could be offered electronically not just to hundreds of students nearby but to tens of thousands around the world."(p 248)

Now, don't shoot the messenger! Let me quickly jump forward and give you Dr. Noam's closing thoughts on the role of teaching and the university.

> "It is not research and teaching that will be under pressure - they will be more important than ever - but rather their instructional setting, the university system ..... We may regret this but we cannot deny it ...... This scenario suggests a change of emphasis for universities. True teaching and learning are about more than information and its transmission. Education is based on mentoring, internalization, identification, role modeling, guidance, socialization interaction, and group activity. Thus, the strength of the future physical university lies less in pure information and more in college as a community, less in wholesale lecture, and more in individual tutorial, less in Cyber-U and more in Goodbye-Mr.-Chips College."(p249)

The point that I hope these quotes makes is simply that the "elephant" is profoundly changing the way that we are going to think about both universities and about teaching our courses. Thus I suggest, first, that we understand Distance Education as any educational courses or programs which use a range of communications MEDIA. The primary three purposes of this telecommunications are to connect students with teachers, with course materials and with geographic resources otherwise unavailable to them. Secondly, I suggest that the key to getting a conceptual "grip" on Distance Education is the key point that TIME not DISTANCE is central in course development.

If you will grant me these two points as "givens", we can then recognize that currently DE is; 1) a growing business enterprise within academia; 2) a more visible educational option in the eyes of students; 3) an area of pedagogical specialization for faculty members; 4) an international professional field entering its third decade. It is complete with networks, associations, journals and jargon. And please note that I did not mention professional standards....no, not yet. The "elephant" has arrived. The challenge to ourselves, to psychologists and educators teaching psychology, is clear: get a handle on it. We must explore this educational environment and develop curriculum within it. And we must evaluate our work and articulate standards within it.

....

The formative stages of Distance Education at the University of Maine at Augusta began in the mid 80s. In 1986, it was designated as the University of Maine System campus charged to develop both an "Educational Network of Maine". This charge, contradicting the current assumptions of the time, emphasized academic programs targeted towards the needs of nontraditional and undergraduate students. As a new untenured faculty member, I joined the faculty and found deep schisms and dispair within the academic community. Some entrepreneurial members invested heavily in "teaching on the System". Most continued teaching in traditional classrooms and some spoke of distance education with passionate and largely well deserved criticisms.

Now, after six years of my own teaching redevelopment efforts; I have offered five courses "at a distance". These courses have been developed as a part of UMA's Division of Social and Behavioral Sciences degree programs at both the associate and baccalaureate levels. One of our associate level degree programs is offered entirely "on the Network". The others are not. My Distance Education courses have included most often Introductory Psychology and Human Development. I've also offered Abnormal, Psychosocial Rehabilitation, and, this semester, Incest and Sexual abuse.

Something about the students.... Our students are a mix of traditional and nontraditional individuals. The average student's age is 32 and does is not a full time student. A large majority of this group is women and our policy of "reasonable access" to college admissions, results is a larger proportion of the student body to have both an absence of well developed academic skills as well as learning disabilities. On the whole, this causes our classes to have a remarkable and, as you are well aware, a challenging diversity of students. They work very hard and are often returning to college in the midst of remarkable turmoil within the other areas of their lives.

Class participation is NOT central to our efforts, course participation is. I have taught these using an evolving combination of FIVE technologies: interactive (2 way audio, I way video) television, fax, telephone and phone bridging and computer conferencing technologies. Our class sizes have ranged from 40 to over 300. These students are both in the origination classroom with me and at 50 or more of our 100 statewide receive sites and centers. These courses have been offered in both regular and seven week summer semester formats.

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At this point I would like to share with you a collage of "clips" taken from my Psychology of Human Development course. I will not "drag you through" the entire 13 minutes of my "home movies" but I do want to illustrate two key points. First, this new media clearly offers new possibilities for the use of class time. In these clips you will see suggested class exercises which are difficult to replicate in a face to face, traditional setting. The second point is that a MAJOR emphasis must be placed upon "constructing community" or "co-inventing" the class. I hope that, while the isolating elements of this teaching/learning medium are clear and can negatively impact the educational process, one can also see a potential for making this class environment markedly "user friendly".

VIDEO HERE
(with discussion)

Key summative questions related to course development include:

1. What is the impact of teaching and learning at a distance upon participants (students and teachers);

2. How effective are Distance Education courses in terms of learning outcomes;

3. How will these courses impact upon educational programs and institutions;

4. What developmental strategy should we invest in and what are the real costs involved? Let me briefly comment upon each of these very complex issues.

At UMA we, the faculty, are very concerned about the impact of these types of courses upon both students and upon teachers themselves. The published literature in this area generally suggests that there is no significant difference between Distance courses and face to face courses in terms of most common dependent variables. Major studies have been done in several nations of the world. For example, Dr. Ted Nunan in Australia and Jocylin Calvert at Deakin University are principle authors of these efforts done in the early 90s. Please contact me if you are interested in exploring this literature or know if good studies.

Within the University of Maine, unfortunately, there are not good reports showing good retention data nor an overall analysis of course evaluations. We, the UMA faculty would like to make better use of the data which does exist on our campus. Within my own courses, about 10% of the student fail to complete in a typical semester. Early surveys of students' attitudes were completed by the university but the timing and construction of these efforts were not well thought out. These early telephone survey data showed high rates of satisfaction with these courses. But keep in mind attrition rates were not addressed and these students had virtually no alternative options for obtaining a degree. That condition is rapidly changing.

Routinely, at the end of every semester, both course evaluation surveys are completed. On the whole, these too suggest course student satisfaction but... It seems to be the case that overall ratings of both courses and of faculty performance seem to be somewhat lower that an equivalent face to face offering.

One of the first ways in which these course development efforts have impacted the university is in making obvious the need for considerable faculty training. Although, currently there are no required elements of training qualifying instructors (full or part time) to teach "at a distance" annually we do have a nationally recognized Conference where training can be obtained. Further, we do have a limited amount of mentoring available through both the presence of an Instructional Materials Developer within the Network itself and in terms of a small Teachers Refinement Program. Informally, these slim offerings are supplemented by a fairly supportive peer effort.

I see that time is short. In winding up these remarks, let me make a point of noting that many major problems remain unresolved. As a part of my own monitoring of my courses I have developed ongoing "value indicators" and problem lists. I will be happy to share these with interested participants after this presentation. Examples of major unaddressed problems include TA support and training, equity in class scheduling between campuses, major problems with computer support, etc. Lastly, a sample our current value indicators includes: ratings of spontaneous class interactions, ratings of adequacy of course syllabi and instructor's rating of extent of peer support as evidenced by peer review data. These lists lead us to a level of technical complexity which we cannot address here but I would be happy to explore these further with you.

……………………………………

By way of concluding, let me first note that I am NOT interested in being a DE specialist. Personally, I strongly feel the need to teach at least half of my course load within a face-to-face, traditional classroom context. As well, I am committed to investing in the academic community and am involved in both faculty affairs at the University and activities within clinical psychology itself. Secondly, let me note with some pride that I did not mention any of the "Q" or "P" words which have become such cliches within organizational circles.

More seriously, in this brief time, I have tried to make three central points: the first is simply that Distance Education is a significant new range of teaching and learning media which no teacher of psychology can afford to ignore. It is not a problem for the next generation of faculty. It is here, now. Second, I have tried to give you a "taste" of the course development efforts which I have been committed to for the past six years and to "hint" at some of the unique assets as well as the risks which DE instructors encounter. Finally, I have shared with you a few comments suggesting the evaluative issues and current practices of which I am aware. It is clear that this is only a modest beginning. But we must and are meeting the elephant in our back yard. I hope that I can follow up with those of you who feel a need or have an interest in this area. A DE network within SUNY's Teaching of Psychology network could certainly become an asset to those who are concerned about evolving standards relevant to our discipline. Thank you.

The Bigger Picture:
Context in the Research Methods Course

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Abstract

Students often learn the techniques of the research endeavor without seeing how they function holistically. An active learning exercise uses personal accounts of research programs to provide this context, simultaneously offering an opportunity for review.

The Bigger Picture:
Context in the Research Methods Course

Research methods texts and courses impart to students those research designs, data analysis techniques, and interpretation guidelines essential to our discipline. However, students are less often given the larger context within which these methods are actually used. How do researchers choose a topic area? A particular approach? How do they build a research program, in which a series of studies may provide answers to questions not even thought of originally? What is the bigger picture? Coverage of these topics can provide a way for students to see how the disparate concepts and techniques they've learned in the methods course fit together in "real life." It also provides an integrative active learning and critical thinking opportunity for review and application of that previously-learned material.

In my undergraduate methods class, I accomplish these goals by requiring students to read two chapters from The Undaunted Psychologist (1993): Tiffany Field's "The Therapeutic Effects of Touch" and Lary Shaffer's "Cracking the Crab Case." Both chapters are behind-the-scenes summaries of the decision-making that goes into programmatic research. Because of the value of active learning, I lead a guided discussion to ensure that the students themselves bring out the important points illustrated by the articles, and that they generalize beyond those specific examples to their own areas of interest. This approach also increases the likelihood that students will read the chapters carefully instead of just skimming (see Chamberlain & Burrough, 1985), although they're so engagingly written that the increase may be small.

Summary of Readings

Tiffany Field's chapter on therapeutic touch covers clinical psychology research of developmental interest, and is largely experimental in nature. Field starts with the benefits of pacifiers for premature infants, and ends with the use of massage in child and adolescent psychiatric patients. Also useful is a nice appreciation of the relevant animal research.

Lary Shaffer's chapter is quite different, involving mainly field research in comparative psychology, an area that most psychology students never contact. Both naturalistic observation and experimentation in the field are described. Shaffer starts with general feeding behavior in herring gulls, moves to gulls that specialize in foraging for one particular species of crab, and ends with research that determines why particular crabs are vulnerable to gull predation at particular times.

Active Learning Exercise

Many research methods topics are well illustrated by one or both of the articles, and many of these topics can easily and enjoyably be prompted from the students. The discussion might begin, for example, with a question about what determines an investigator's choice of topic area. Both chapters offer clear and unexpected answers: Field herself bore a premature infant (for health reasons) and became interested in research on this population as a direct result. Shaffer was intrigued by the glamor of wild creatures in exotic natural surroundings.

Students can be asked what determines their own interest areas (you might be surprised). Pragmatically, the less exciting role of funding pressures is not ignored in either chapter (Field, pp. 3, 5, 11; Shaffer, p. 69), and students need to be aware of it.

The initial choice of specific research questions to address is also well described in the chapters; springboards are the work of other investigators, contradictory results in the literature, current theory, and careful observation of the subjects. Both chapters emphasize the importance of the latter: Fruitful questions, the starting point of research, are more likely to be asked after attainment of a good understanding of the organism, its world, and its capabilities (Field, p. 5; Shaffer, p. 62). In Shaffer's case, an additional cogent reason determined his choice of foraging behavior: He wanted to ensure that he would find enough information for a dissertation, and gulls do have to eat (Shaffer, p. 62).

From these starting points, what next? Students should be able to generate ideas, and one suggestion to look for is the formulation of operational definitions: These are covered early in the research methods course, and need to be thought out early in a research program as well. I ask the students to find examples, and both chapters offer good ones. Field in particular discourses at length on the difficulties of operationally defining therapeutic "touch" (p. 7). Different and sometimes unspecified definitions in the existing literature led to contradictory clinical results, and a standard practice that was actually harmful. Students are impressed, and the importance of operational definitions is underlined. This is a good point at which to ask for other examples from their content courses.

Specific research designs and methodology can then be discussed. Both chapters illustrate the hypothesis testing process: Field suspects that pacifier use and massage might both promote premature infants' ability to thrive, and tests these hypotheses directly. Her research designs make use of inferential statistics, the t test in particular (although it's not explicitly described). (An ethics question can be raised at this point, since babies in Field's control groups were prevented from benefitting from her interventions.) In turn, Shaffer knows that his gulls are locating sand domes hiding crabs on the beach, so he tests which features of the domes are cuing the gulls (p. 64). His approach is experimental in nature, but nontraditional enough to spark a discussion on the essential characteristics of experimental design.

The more inductive style of research in which a specific hypothesis is not required and, in fact, may not be possible, is also presented in these chapters: Shaffer has no idea initially why his crabs are making themselves available as gull prey, and must simply gather as much data as he can and try to find order somewhere (p. 68). Such less-traditional approaches offer a good basis for discussion of the strengths and limitations of these methods.

Both chapters explicitly emphasize the detective nature of programmatic research, a metaphor that students can readily appreciate. Field must determine why her interventions are successful; Shaffer must solve the mystery of the crabs. The links from study to study are solidly based on the clues available from past research. For example, Field noted contradictory previous research on the effects of handling on blood oxygen in premature infants, and therefore took oxygen readings in her own work testing the effects of massage (p. 7).

In Shaffer's case, useful clues included the results of a study from 1900 (Shaffer, p. 67). Students enjoy seeing how even work performed so long ago can still be valid and useful; and the cumulative and cooperative nature of science can be emphasized. The authors also frequently refer to collaborators and other researchers in the same area, who are instrumental to their progress (e.g., Field, pp. 9-10).

During the discussion, students can be asked to generate research methods topics and show how they apply to the chapters. Topics that might be suggested this way are the various forms of reliability and validity, several of which are well illustrated by the chapters. Field's use of the Brazelton Assessment Scale for infants (p. 8) can lead to such a discussion. How would its reliability be assured? How would it be validated? Field discusses threats to validity in her own work, such as confounds (pp. 8, 9), which students can locate. The role of replication is also discussed, and can be tied in with reliability and validity. As for Shaffer, special aids such as blinds were necessary to ensure that his field observations were unobtrusive and valid. Even the collection and measurement of dead crabs, surely an unobtrusive measure, prompted validity questions: Were the crab carapaces found at the gull nests typical of those the gulls caught, and of those available on the beach? Sampling and measurement issues are relevant here as well. And what a great opportunity to delve into the mechanics of probability: Shaffer marked 500 individual crabs in one study area and then watched for them to reappear, alive or dead (p. 71). This research technique tracks the fate of individuals and allows an estimate of population, and is common in field biology. Most psychology students will be unfamiliar with it, and intrigued--and interested in how probability mechanics applies to other psychology problems.

Another key topic is the necessity of avoiding causal inferences from correlational data. Both chapters offer several good discussion points: For example, Field explicitly addresses this issue with respect to the puzzling finding that therapeutic touch was correlated with later gains in mental and motor abilities (p. 8). Based on their knowledge of the categories of correlation/causation confusions (in one scheme, directionality, third variables, and selection bias, Stanovich, 1992), students are able to describe and understand the chapter examples. They have trouble, however, understanding why even experimental evidence of significant physical benefits and monetary savings was not enough to ensure application of the techniques Field had tested. Instead, characterization of an underlying physiological mechanism was necessary before adoption was widespread (Field, pp. 6, 8). My students were upset about this reductionistic attitude, but it's a perennial problem in many areas of psychology.

At several points, students have the opportunity to see that, however careful the planning and execution, and however logical the theory, the data are sometimes different from what was expected. How do researchers handle such a denouement when developing their research programs? The chapters can ignite discussion, with students (and instructors) providing examples from other research areas. Sometimes detective work can salvage something important from the wreckage. The happier side of unexpected results, serendipity, is also clear in both chapters (e.g., Field, pp. 8, 9), and students knew it all along: Luck *does* play a role! Students can offer examples of other serenditipitous findings in psychology, including Pavlov's initial work on classical conditioning, Selye's General Adaptation Syndrome, Olds and Milner's discovery of intracranial stimulation as reinforcement, and various psychotherapeutic drugs, such as lithium for bipolar disorder.

Finally, demystification is also a highly worthwhile goal. We, as researchers, know that ours is a very human endeavor, but students only see the textbooks and dry professional journals, and have trouble imagining themselves in our places. How can we interest more students in research, but at the same time ensure that they will not take research results as mysterious veridical products of omniscient prodigies (also see Brems, 1994 for useful suggestions)? The biographical summaries that accompany the chapters help by showing the researchers as ordinary human beings with outside interests. The unpredictable hitches in research, well portrayed in the chapters, are even more powerful: Shaffer in particular seems accident-prone, losing a research blind and almost losing a truck, and surviving a hilarious confrontation with the Harbor Master (pp. 65-66, 70). The long hours and hard work required by research (Field, p. 3), enlivened sometimes by more serious hardships, are also accurately depicted. Shaffer, repeatedly cold, wet, and seasick in the service of science (pp. 64, 66), regretfully notes that "while there may be no gain without pain, there can be pain with no gain" (p. 64); Field in her turn reaps only frustration in her search for one underlying mechanism (p. 6). Students need to hear about this side of research too. It *is* part of the bigger picture.

I have outlined an integrative exercise designed to help students see how psychologists actually make use of research methods principles in long-term research programs. Individual instructors can easily tailor the particular methods covered to suit their own needs, and can use other works of a similar nature rather than these particular chapters. Other chapters in the same book would be good candidates; and I have myself used Skinner's (1956) "Case History of Scientific Method," sometimes described in methods texts, as a basis for similar discussions. Any such material can be supplemented by the original research reports for more rigor. Finally, active learning approaches have been shown to offer potential benefits (e.g., Meyers & Jones, 1993), but those instructors who would rather ensure content coverage could easily lecture over the material, and provide the extra depth and integration themselves: The exercise is readily modifiable.

Evaluation

I used this one-session exercise during Fall 1994 for the first time, and it seemed to work well: The 10 students enjoyed the articles, saw their relevance, discussed readily, and obtained a different perspective on research and researchers. In Fall 1995, I administered a brief anonymous evaluation for this class session that confirmed this positive reaction, although it should be noted that the class was small (N=6). On a 5-point scale from "strongly disagree" to "strongly agree," the usefulness of the readings was rated as 4.5, and of the discussion session as 4.33. Representative written comments were: "The readings made the concepts learned from the book come to life," "It permitted a glimpse into the 'real world' of research," and "Made us figure out things for ourselves--pick apart the research." Two students wanted more material of this sort: "Maybe spend two days on this and give one or two more articles to fully flesh out the real-life examples. This would be good at the very end of the semester to recap our class."

Conclusion

Shaffer, having cracked his crab conundrum, concludes with a comment on the relevance of such research to human psychology. Like other foraging animals, we "see things when we know what we are looking for, but we are likely to overlook even quite obvious things that we do not expect to find" (Shaffer, pp. 72-73). Research methods help us to see more clearly.

Similarly, knowledge without generalization is nearly as useless as a clinical intervention that is only effective while it is in place. Providing context for research methods gives students a different perspective that might reasonably enhance their ability to generalize. It is also fun to do.

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Author Note

1. An earlier version of this paper was presented at the annual Conference on Undergraduate Teaching of Psychology in Ellenville, NY, March, 1996.

2. My thanks to the members of the Research Methods class of Fall 1995 for their helpful and detailed comments about this session, and to Dr. Roy Hopkins for his useful editorial suggestions.

3. Copies of this paper are available from the author at the Department of Psychology, St. Mary's College of Maryland, St. Mary's City, MD 20686.

Teaching Concepts in Experimental Psychology through Journal Articles: A Technique that Works!

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Abstract

In this presentation, I will discuss teaching Experimental Psychology through the use of journal articles specifically keyed to each concept in the course. For each and every topic, students read two or three journal articles which clearly illustrate the concept being taught (e.g. independent vs. dependent variables, experimental vs. correlational research, operational definitions, reliability, validity and ethical issues). Participants in this session will receive specific suggestions for journal articles which complement each concept taught in Experimental Psychology. The use of cooperative groups to enhance student learning in the course will also be addressed.

Teaching Concepts in Experimental Psychology Through Journal Articles: A Technique that Works!

Teaching concepts in Experimental Psychology proved to be a real challenge. Students had great difficulty differentiating between experimental and correlational research, understanding independent and dependent variables, operational definitions, reliability and validity, factorial designs, confounding variables, and ethical issues, specifically the use of deception in research with human subjects. These concepts are abstract, and I found that without concrete examples, students had difficulty grasping and fully understanding them.

I began designing a curriculum for my course such that every single topic is taught and illustrated by two or three journal articles utilizing that concept. For example, when teaching about the differences between experimental and correlational research, students read not only the textbook chapter, but also two articles which are experimental designs and two which are correlational designs. I have found articles which work well to illustrate the concepts of operational definitions, reliability, validity, and even factorial designs with significant interactions. The articles used are clear and understandable to undergraduates, many of whom have never read a professional journal article prior to taking this course. The articles provide an additional side benefit in that they expose students to a wide variety of research fields within psychology.

Students spend class time answering key questions about each article in cooperative groups, and then the articles are gone over in whole class discussions. I often refer back to articles read earlier in the semester for concepts taught later in the semester. For example, one of the studies that is used early in the semester to help students distinguish between experimental and correlational designs utilizes deception. This article, along with several other articles that have been read over the semester are utilized when we talk about ethical issues in research, thus providing students with a very broad base of research studies and a wide variety of ethical issues raised by them. Each article is also used to reinforce concepts taught earlier in the semester.

In my presentation, I will suggest several possible specific journal articles which have worked to complement each concept taught in Experimental Psychology. I will also address the use of cooperative groups and how they are used in conjunction with the journal articles. This has been particularly successful in facilitating student learning in my class. I am constantly impressed with the degree of comprehension and retention of material throughout the semester. Student term papers, in which they are required to design an original experimental design, are also of an exceptionally high caliber.

Student feedback about the course at the end of each semester has been extremely positive Students report that they truly enjoy the course, that they have learned more in this course than in any other, and that they feel much more confident and competent when reading journal articles. The most encouraging feedback of all comes from former students, who frequently report back to me from graduate programs that the particular teaching technique used in my Experimental Psychology course proved to be invaluable to them in graduate school.

Computer Aided Statistics Instruction Protocol (CASIP)
Restructuring Undergraduate Statistics in Psychology
An Integration of Computers Into Instruction and Evaluation

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Computer Aided Statistics Instruction Protocol (CASIP) Restructuring Undergraduate Statistics in Psychology An Integration of Computers into Instruction and Evaluation

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ABSTRACT

It is the authors' experience that students in introductory statistics courses tend to focus on rote calculations rather than the theories upon which statistical procedures were created. Using computer program modules to enhance lectures, the authors intend to create a class structure wherein calculations and rules could be easily obtained via computers. This permits more time for instructors to teach the underlying assumptions, characteristics and theories of each statistical test. Furthermore, through computer generated quizzing and mastery-style evaluation of student performance, the instructors can monitor class progress, and modify their teaching techniques accordingly.

INTRODUCTION

At Brooklyn College, the Psychology Department is currently in the process of setting up two Statistics laboratories for undergraduate and graduate students. The classrooms house 34 and 21 IBM PC compatibles respectively and were formed with the goal of teaching statistics more effectively and efficiently. In anticipation of the labs, we have been discussing, planning and developing a number of program modules that could be incorporated into the graduate and undergraduate courses. This paper briefly outlines the latest developments in the course designs and the program modules that we have started to use this semester. We will focus on the undergraduate statistics course because many of the following ideas were formed with the needs of undergraduate students in mind.

HISTORY

In 1993, the chairman of the Psychology department at Brooklyn College approached Ki-Young Rah and asked him to start experimenting with various ways to incorporate computers into the undergraduate statistics course. The psychology department had just received funds to set up two computer labs for the graduate and undergraduate statistics courses. Although many ideas had been proposed ranging from computerizing the lectures to virtual classrooms, they could not be tested nor improved due to the limited resources available at the time.

Rah decided to take a conservative approach by taking into account the limited student access to computers at the time. First, computer assignments using a spreadsheet program were utilized as extra-credit assignments. These assignments gave the students hands-on experience with various statistical theories. Second, because of the constant request for more examples, a program was written which randomly generated problems with data and answers. Finally, the students were given access to a freeware tutorial which was downloaded from the Internet. Overall, the students were very receptive to these additions.

Two years later, with the impending completion of the statistics labs, the authors sat down to discuss how computers could be used to enhance undergraduate statistics courses given the increased student access to computers.

PHILOSOPHY

When we began to discuss how to take full advantage of the new facilities, we decided to shift our focus from using technology as a mere enhancement of lectures to restructuring the course itself. Enhancing lectures, especially for a dry subject matter such as statistics, can be of great value. Points can be illustrated with color graphs, animation, video and sound. Such enhancements may draw the student's attention and increase the likelihood that the point will be remembered. Unfortunately, such multimedia presentations still have the same inherent flaw as any form of lecturing. It is extraordinarily difficult to pace and present lectures that will satisfy all of the students. Any lecture format always results in some students becoming very bored, and others completely lost.

In addition, using technology introduces two additional problems. First, the presentation may effectively entertain the students, but it may also serve to divert their attention. That is, they may miss the vital information that is given within the presentation. Second, by using video clips, slides and sound, flexibility is limited. One of the main reasons why blackboards are still used today is simply because they provide the greatest flexibility. It is difficult to edit a video clip or reshuffle the order of a computer slide show during a lecture. Furthermore, it is difficult to justify the amount of time taken to develop a multimedia presentation when conventional lecturing style could basically get the same points across, although perhaps in a less entertaining way.

Taking note of such problems, we decided to shift our focus from presenting a more exciting, dynamic presentation to changing the format of the course itself. We began by defining our goals. What do we, as instructors, want the students to take away from the course? Our main goal, even when using conventional lecturing styles, has always been to teach students how to organize, analyze and interpret data accurately. To achieve this goal, the students need to: 1) know how and when to use various statistical techniques, 2) understand the theories behind the techniques and 3) develop a "number sense".

Our experience has been that students tend to focus more on rote calculations and following steps rather than on the underlying theories of the statistical techniques. In other words, the students gained "declarative" rather than "procedural" knowledge.

Many students come into the course dreading the next few months because of their fears of mathematics. They know that, in a typical professional setting, statistical analyses are mostly done with the help of computers. They argue that there is little need to know the formulas to correctly analyze data.

Although this may be the case, many may argue that one loses some understanding of statistics when analyzing data strictly with computer assistance. We agree with this concern. Doing calculations by hand seems to better promote understanding of the mathematical bases for statistical tests. Students are better able to grasp the notion that a variance refers to "an average squared deviation from the mean" if they perform the calculations by hand. In addition, by performing enough calculations, they are able to estimate what the test statistic should look like by examining the data. This ability to predict what the final outcome should look like is what we refer to as "number sense." It is a very important ability because it allows the student to more accurately interpret results from a statistical package by performing error checking. As such, we have chosen to greatly de-emphasized the hand-calculation component of the course.

With our goals in mind, we next focused on the immediate needs of the students. Every semester, a number of students make the same requests: more examples, more chances to prove comprehension of the material, and access to tutors. We endeavored to meet the first request by allowing the students to generate their own examples and calculations. For the second request, we decided to redesign the course to allow the students to take the final exam as many times as they wished. For the third request, the course was redesigned to be much more student oriented.

INSTRUCTION

At Brooklyn College, we are allotted three hours of lecture and four hours of laboratory time per week. As our course design stands now, we use the first month or two to lecture to the students. The laboratory time is used to teach the students how to use the computers and our software modules. After the lecturing has been completed, the lecture and laboratory time is combined to form one large class. This is the time period within which the students may practice, test their knowledge, or take exams at their own leisure. The instructors spend this time giving individualized assistance to the students when needed. This format was conceived to maximize the individualized help that we wished to achieve.

The students are given access to a number of programs that provide examples, explanations and the ability to explore theoretical issues. EXPSTAT generates random studies, data and answers. The students may generate a random example and test themselves on the calculations or design topics. Similarly, the instructor can use EXPSTAT to clarify lectures through examples. A number of tutorials on various theoretical topics are also available for the students to go through on their own time. This allows students to review topics interactively at a pace with which they are comfortable. Lastly, a set of spreadsheet pages (QPWstat) were created that provide analyses and graphs. These spreadsheet pages are used to illustrate various theoretical issues. This is achieved during lectures where immediate changes in graphs and test results can be pointed out as different types of data are entered. The spreadsheet pages are also used for assignments which allows us to direct the exploration process and emphasize the important theoretical concepts. For example, the idea of a Type II error can be elucidated by having the students randomly select two samples from two different populations. The students are then instructed to test whether the two samples differ significantly. By considering whether the observed result conforms to the expected outcome, the students are provided with a concrete example of Type II error.

When designing the above mentioned programs we had to consider their ease of use. We were also careful to create an interface that was consistent and simple to learn. We opted to use the Microsoft Windows™ due to its GUI interface and the simplicity of its "point and click" operations. The program that brings the above mentioned programs into a single package is called SKRstat (see Fig. 1).

MASTERY-STYLE EVALUATION

In our experience at Brooklyn College, students who enroll in an undergraduate introductory statistics course tend to vary enormously in their educational backgrounds and interests. Furthermore, because we typically teach the evening section of the course, there is also a wide age range.

We believe the mastery style is the most effective and accurate method of evaluating a student's knowledge of statistics. By allowing the students to take the final exam multiple times, we minimize the effects of various extraneous factors. Unfortunately, applying a mastery format dramatically increases the amount of work for the instructor and teaching assistant. However, if we make use of computers to generate random exams (or randomly select exams from a database) and grade them, then no extra work would be added. In fact, the evaluation would be much simpler and would require less effort.

We have developed such a program, called SKRquiz (see Figure 2). The program uses the same user interface as SKRstat so that student expertise in using the program does not impact their grade. SKRquiz can present two types of questions. First, theoretical topics and simple calculation questions are asked in a multiple choice format. The program randomly selects a set number of multiple choice questions from a question bank written in text format and presents them.

Second, experimental design questions and calculations are tested using the previously mentioned example generation engine (EXPSTAT). Various questions about the study design are asked, such as tail, hypotheses, and statistical test to be used. Then, the calculation screen is displayed in the same way as shown in SKRstat. However, instead of presenting the students with the completed calculation steps, the students are required to fill in randomly selected missing values.

The exams are timed and the program provides immediate feedback on how the students are doing and allows them to review their answers. They are also given the opportunity to review any past exams and print them to study from as needed. This allows the students to learn from their own mistakes. Before taking the final exam, the students are encouraged to take practice quizzes to familiarize themselves with the format and difficulty of the questions. Only their best final exam score is used (and other assignment grades) when determining their course grade. We believe that this will motivate the students to learn beyond the minimum necessary to do well in the course.

ON-LINE STUDENT MONITORING

The use of computers for teaching and evaluating provides a very convenient way to monitor a student's performance. The use of these various programs and exams are all logged for each student. This informs the instructors in which areas students have the most problems and whether the exams were too easy or difficult. This design also gives early warnings of students who are performing very poorly but are hesitant to approach the instructors for assistance or guidance.

The students are also able to monitor their own performances. The computer provides immediate feedback on the exams and allows for later review. Also, through the use of SKRstat, the students are able to recognize their areas of weakness. Through this self-monitoring the students are constantly aware of their progress.

ADVANTAGES/DISADVANTAGES

Advantages

There are a number of advantages to using a computer based protocol. First, the instructor spends less time formulating questions and calculating answers. We have found that one of the most frustrating limitations in lecturing is the amount of time spent doing calculations and drawing graphs. It would be much more efficient and effective to use a computer to do the calculations and draw the graphs both during lectures and during the lab section when the students are generating their own examples. This frees up the instructor's time to focus on more theoretical topics and answer individualized questions during the lab section. Also, the chance of making an error is decreased by having the computer do the calculations.

The same advantage is found for the evaluation process. A mastery-style evaluation protocol is possible only because the computer is able to effortlessly generate as many exams as needed. The time needed by the instructor and/or teaching assistant to generate and grade the same number of exams is unrealistic.

Second, the student can use these programs to study at their own pace, on their own time. Thus the student takes an active role in the learning process. This individualized learning allows both the strong and weak students to learn at their own pace without affecting other students. Similarly, the exams are taken at the convenience of the students and as often as they wish. Therefore, their grades will not be so strongly affected by various personal problems that may arise throughout the semester, such as illnesses, religious commitments, etc. The students are also less anxious about taking the exams because they know that there will be other opportunities to show their true levels of knowledge. Also, the constant feedback as to how the students are doing, serves to motivate them to study.

Finally, the current design is highly flexible. Feedback from students' performances allows the instructor to optimize the type of exams given. Furthermore, the program modules can be implemented in a variety of different course designs and lecture formats. Depending on how the students use the various available programs, one can implement different levels of computerization.

Disadvantages

The main disadvantage to using computer generated exams is the lack of sophistication in both the generation and grading. The multiple choice questions can be as complex and theory oriented as possible because they are generated by the instructor. However, the study related questions are very structured and limited in many ways. Free-form calculation, making interpretations and answering questions in either essay or short answer format is not currently possible. Also, by allowing the students to take the exams multiple times, we run the risk of the students memorizing the correct answers to the multiple choice questions. This is a major problem that can only be minimized by increasing the size of the multiple choice question database. The same lack of sophistication is present in tutorials. A tutorial can never be written that will cover all the questions that students will ask. That is why human instruction is still necessary.

A second disadvantage is computer phobia. Students who have never touched a computer before may perform poorly on exams and assignments partly because of their discomfort with using computers. We have tried to minimize this by urging the students to use the various programs and take practice quizzes as soon as possible, but there may still be students who remain uncomfortable using a computer.

Lastly, some may argue that using computers as teaching assistants takes away the interactivity between the student and instructor and between the students themselves. This loss of interactivity would probably be a serious disadvantage if computers take over the role of the lecturer. However, CASIP was specifically designed to maximize this human interactivity between instructor and student rather than reduce it.

CURRENT OBSERVATIONS

The Spring 1996 semester marks the first semester within which we have implemented our course design. Although the course has only been underway for about one month, we have noted some successes with our format. Within one month's time we have noted that the students have an increased comfort with the computers and the program modules. Furthermore, the students have expressed an increased interest in the subject material due to the highly interactive nature of the assignments and tutorials. We have also noticed that the students were spontaneously forming small groups in the form of collaborative learning. It would seem that having a common enemy (the computer) does tend to bring people together. We also noticed that there were many students who preferred to work alone. We believe that this option to work alone or together is an improvement over the formalized collaborative learning paradigm.

There have been, as well, some pitfalls. For example, the students have been somewhat bewildered by the amount of information that is presented in the first month. They sometimes have trouble grasping the concepts, and other times complain that the lecture moves too fast. This is understandable because we have designed the course such that they would receive all the theoretical and basic concepts in the first month or so. The reasoning behind this format was to maximize the individualized instruction time that the students would receive once the lecturing section of the semester is over. However, we have been persuaded by the students to extend the lecture time this semester, and we will be considering alternative organizations for the lectured material.

The use of computers introduced a number of problems that we had not foreseen. Security for assignments and exams is a major consideration. Although, the student must sign in with a user id and password, it is not very difficult to copy or modify key files that determine their grades. In response to this new threat, stringent security measures were devised. Each of the students' disks are collected at the end of every class and backed up on the instructor's machine. The students are also restricted from doing the assignments and taking the exams outside of the classroom. Lastly, the students will be required to sign in when they decide to take the final exam.

Another problem with computer use is accidentally deleting or overwriting files. A number of students have already managed to overwrite previous assignments that had been completed. The frustration is understandable and very difficult to rectify. Again, we hope that enough experience with computers will limit the number of such disasters.

Because this is the first semester in which we have presented this format of teaching statistics, we did not expect it to be flaw-free. However, because our computer modules have been set up for maximal flexibility, we hope that we can correct any major flaws in the design for future semesters.

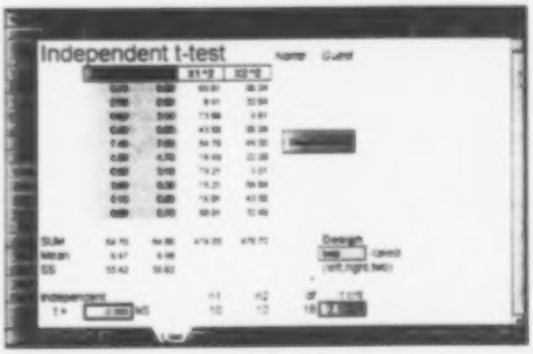
World Wide Web Page:
http://acc6.its.brooklyn.cuny.edu/~krah

Figure 1

SKRstat

File
Misc
Help

QPWstat


Independent t-test
Name
Guest
SUM
Mean
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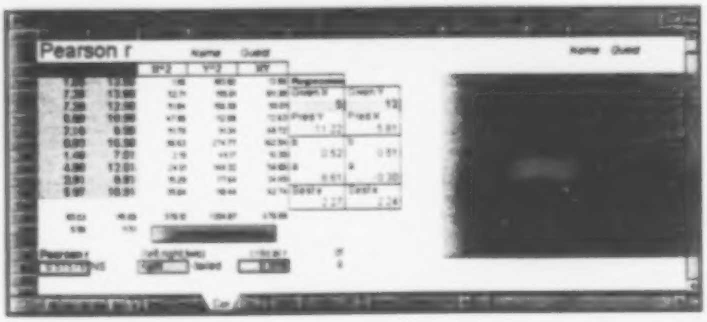
Design
tailed
(left,right,two)
Independent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Pearson r
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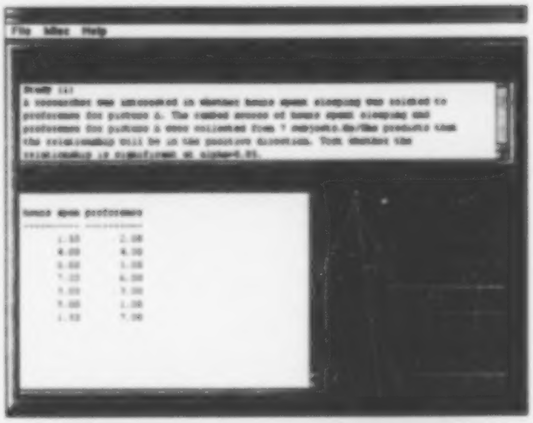
tailed

EXPSTAT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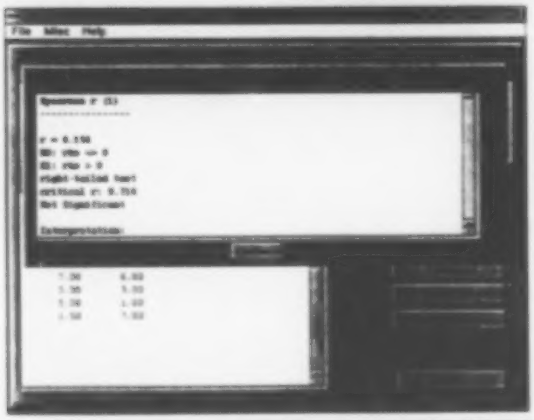
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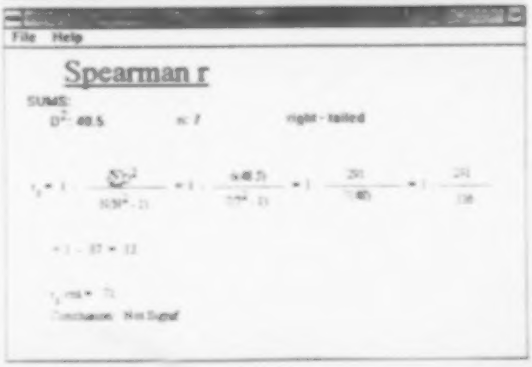

Spearman r

SUMS:

D^2: 40.5

n: 7

right - tailed

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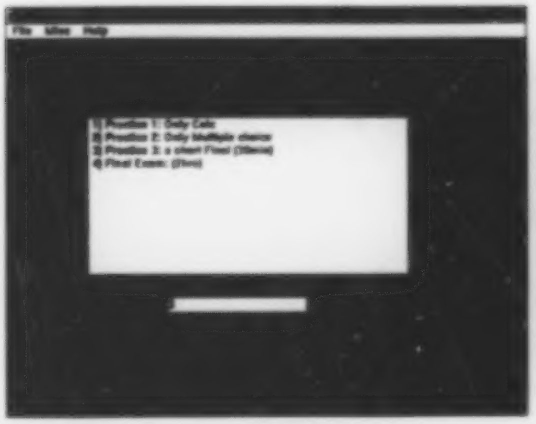
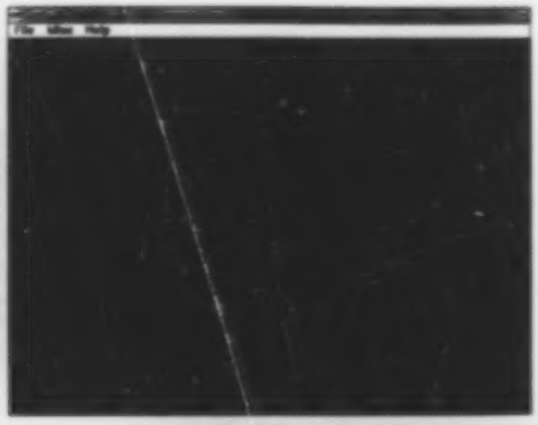
Figure 2

SKRquiz


File Misc Help

1) Practice 1: Only Calc
2) Practice 2: Only Multiple choice
3) Practice 3: a short Final (30min)
4) Final Exam: (2hrs)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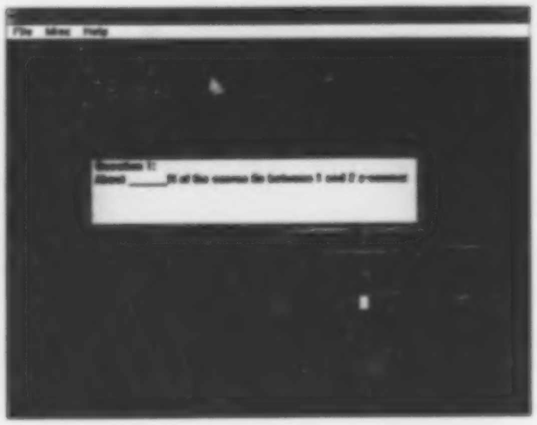
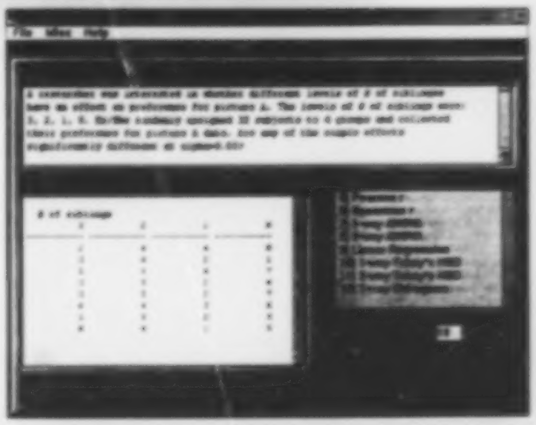

File Misc Help

Question 1:
About _____% of the scores lie between 1 and 2 z-scores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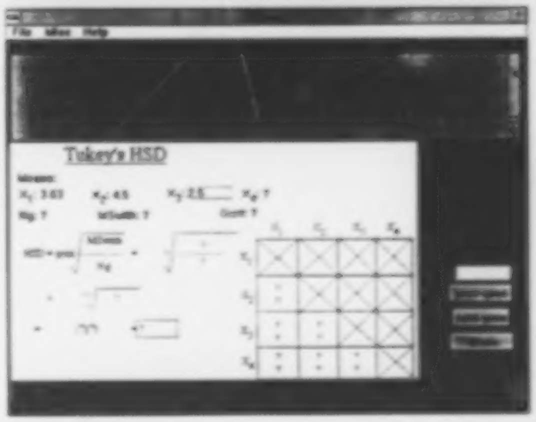
File Misc Help
Tukey's HSD
Means:

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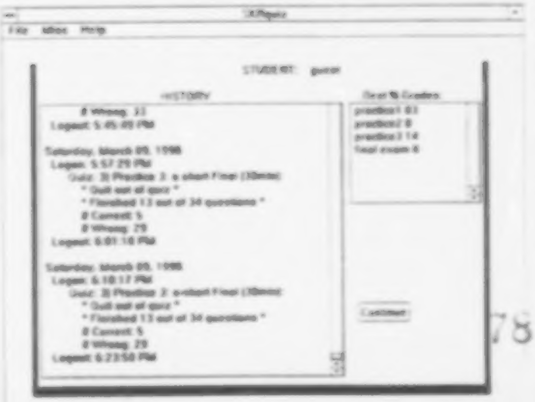
SKRquiz
File Misc Help
STUDENT: guest
HISTORY
Best % Grades:
Continue

```
        # Wrong: 33
  Logout: 5:45:49 PM

Saturday, March 09, 1996
  Logon: 5:57:29 PM
     Quiz: 3) Practice 3: a short Final (30min)
        * Quit out of quiz *
        * Finished 13 out of 34 questions *
        # Correct: 5
        # Wrong: 29
  Logout: 6:01:18 PM

Saturday, March 09, 1996
  Logon: 6:10:17 PM
     Quiz: 3) Practice 3: a short Final (30min)
        * Quit out of quiz *
        * Finished 13 out of 34 questions *
        # Correct: 5
        # Wrong: 29
  Logout: 6:23:50 PM
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practice1 83
practice2 8
practice3 14
final exam 6
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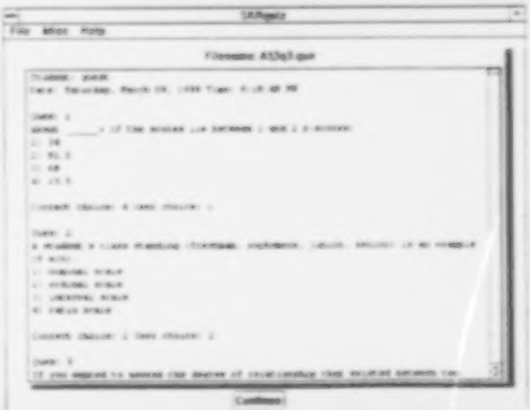
SKRquiz
File Misc Help
Continue

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Teaching a Test and Measurements course by developing a measurement instrument

Balancing coverage of the range of core topics with in-depth coverage of selected issues is a major concern in designing a Test and Measurement course. Many courses and texts in this area look like lists of tests in print. Students are presented with descriptions and examples of literally hundreds of tests designed to evaluate intelligence, personality, academic aptitudes, vocational preferences and a host of other individual dimensions. At the other extreme some texts bombard students with advanced statistical formulas, seeming to imply that a course in Test and Measurements is nothing but an applied statistics course. I feel that it is important to integrate these two approaches so that students gain an appreciation of the variety of available psychological tests, and an understanding of the mechanics of test construction and evaluation.

My Test and Measurement course is divided into two content components with an overlaying group project. In the first phase of the course I introduce fundamental concepts of test design, construction and evaluation. Students read about, and discuss in class, issues related to item generation, standardization of administration and scoring procedures, establishment of norms, the appropriate use of the various measurement scales, factor analysis, item analysis, and methods for determining reliability and validity. In the second phase students use these fundamental concepts to evaluate the classic tests in each of the areas represented in psychological measurements.

I feel that this progression from the general to the specific provides a sound initial introduction to the domain of test and measurements. However, I want my students to more thoroughly appreciate the mechanics of test construction and I believe the best way to do that is to have them actually create a test. I use depth of cognitive processing as the focus of this exercise. Students are introduced to the wealth of theories and associated measures that exist in this domain. They are then set the task of developing a test that operationalizes Bloom's Taxonomy of the Cognitive Domain (1956).

In order to develop the Bloom measure students work in "core groups" of five. Each member of the group selects one of the upper levels of the taxonomy (comprehension, application, analysis, synthesis and evaluation) that they wish to become an "expert" in. These individuals from each of the "core groups" (usually five per class) form "expert groups" to study their specific level. This means that each student is actually a member of two working groups simultaneously, the "core group" and the "expert group". Individual students are responsible for creating one set of questions (usually a paragraph situation with five objective questions) that represents their level of expertise. The "core group" then works together to produce a cohesive test consisting of five questions, one representing each level. These tests are then exchanged with other "core groups" for critical review. Groups determine if the questions they are reviewing represent the level of the taxonomy they were designed to measure, if they are bias free and conform to the requirements of sound test construction discussed in class. At this point each group selects the three questions per level that they feel are best constructed. (See attached figure for a graphic representation of the entire process.)

After the test is developed each "core group" selects one of the components of validity as outlined by Messick (1995) that they wish to use to validate their new measure. In order to accomplish this one of the groups develops a thorough description of the construct of depth of cognitive performance. A second group develops a model of the predicted scoring patterns based on Bloom's theory. A third group determines appropriate alternative measures to use to establish the external aspects of validity. A fourth group examines the issues surrounding generalizability of the new measure. The fifth group focuses on the possible consequences of the use of the new measure.

The new Bloom test is then administered to a group of subjects along with a second (external) measure of learning style. The results of the two tests are compared to determine criterion validity. The results of the Bloom test are factor analyzed to ascertain whether or not the predicted factor structure exists. The results are also subjected to item analysis to examine the power of each item.

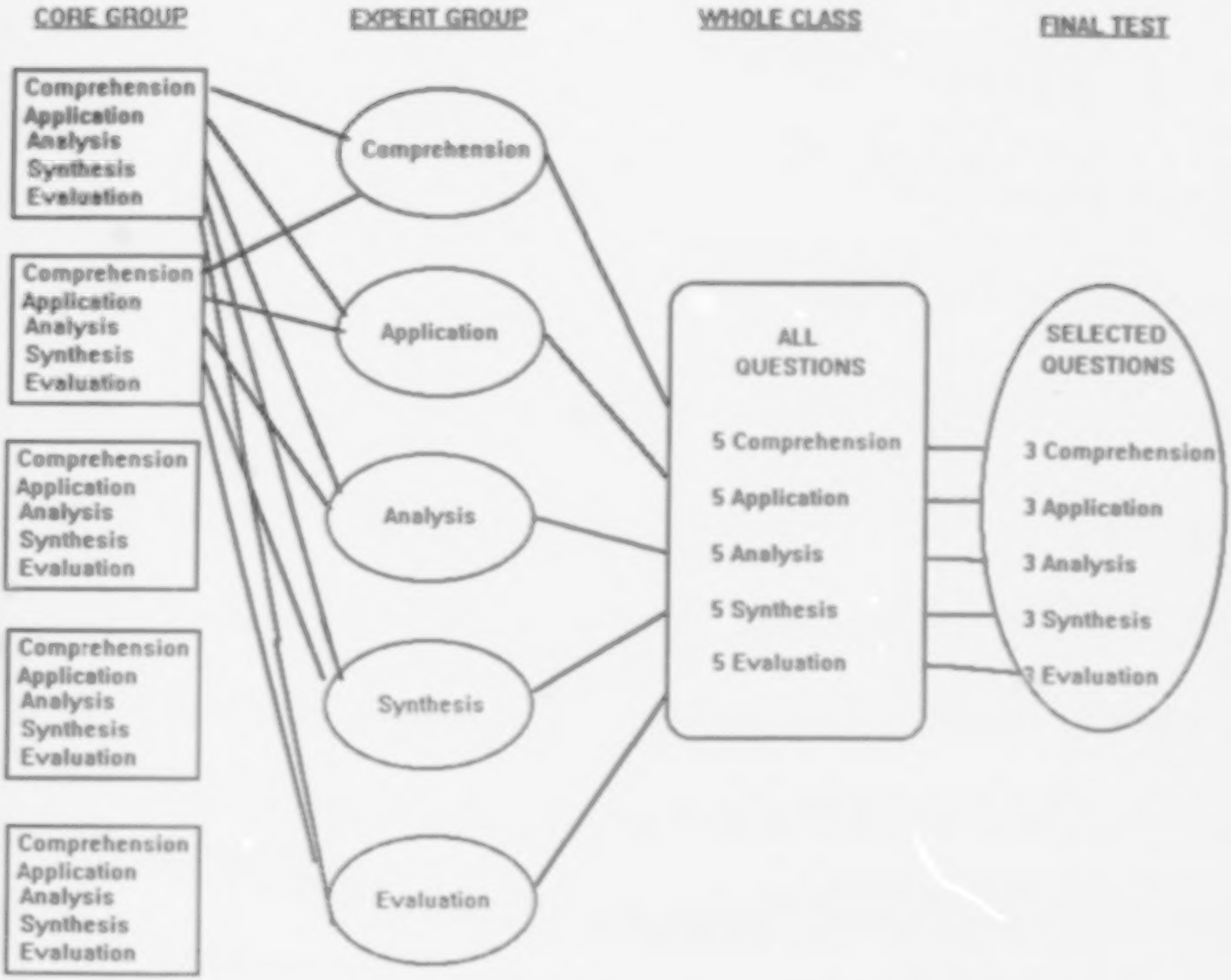
This project design accomplishes several of my goals. It reinforces the fundamentals of test construction and evaluation and-introduces students to one measurement domain in great depth. This project also introduces the students to working in interrelating collaborative groups while reinforcing the content components of the course. Each member of each group must contribute a critical component of the group project. This model allows for individual and group accountability and assessment of performance. Finally, to ensure that each group member is familiar with all aspects of the project, questions concerning the development process, the theoretical underpinnings, and the interpretation of the specific results of the tests form the basis of the final exam in the course.

References

Bloom, B.S., Engehart, M.D., Furst, E.J., Hill, W.H., & Krathwohl, D. (1956). *Taxonomy of educational objectives: The cognitive domain*. New York, McKay

Messick, S. (1995). Validity of psychological assessment. *American Psychologist, 50*, 741-749.

Test Creation Project



CORE GROUP

EXPERT GROUP

WHOLE CLASS

FINAL TEST

Comprehension
Application
Analysis
Synthesis
Evaluation

Comprehension
Application
Analysis
Synthesis
Evaluation

Comprehension
Application
Analysis
Synthesis
Evaluation

Comprehension
Application
Analysis
Synthesis
Evaluation

Comprehension
Application
Analysis
Synthesis
Evaluation

Comprehension

Application

Analysis

Synthesis

Evaluation

ALL QUESTIONS

5 Comprehension
5 Application
5 Analysis
5 Synthesis
5 Evaluation

SELECTED QUESTIONS

3 Comprehension
3 Application
3 Analysis
3 Synthesis
3 Evaluation

Psychometric Scales: Learning by Doing

George C. Fago

Ursinus College, PA

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PSYCHOMETRIC SCALES: LEARNING BY DOING

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Ursinus College

Psychometric scales or more popularly "psychological tests" are typically of intense interest to the beginning psychology major. Regardless of whether the student is interested in the more biological end of the field or, in contrast, the applied aspects of the field, psychological testing remains 'mysterious,' 'arcane,' and for some a topic for skepticism and/or uneasiness. Regardless of how they 'feel' about the tests, most students are fascinated by them. Yet, teaching students about psychometrics and psychological scales can be a daunting problem. I remember, without even a shred of nostalgia, both an undergraduate course and a graduate course which dealt with the topic. My recollection was that a 'good lecture' was one which was merely profoundly boring, whereas a 'bad lecture' was one which seemed pointless if not deliberately obscure. The problem of course is that the instruments typically lack a high degree of face validity to begin with. To compound the problem the topic is often approached without any reference to concrete examples at all. The highly abstract approach is almost certainly doomed to failure, while using examples with poor face validity is not a great improvement. Given a lack of meaningful context, presenting the steps used to generate the items often leaves students with no appreciation of the reasoning lying behind the steps. In an attempt to rectify this problem I developed a method of instruction that makes the process for the students as concrete as possible. What follows is the approach I use to teach novice psychology majors the basics of scaling in a manner which demands active, participatory learning and problem solving on their part. In doing so it appears to foster much greater depth and appreciation in their level of understanding of the concepts, as well one which reinforces other concepts dealt with in the course.

B: SETTING

It should be noted first of all that for the method to work there must be access available to a networked computer system. At Ursinus all computer labs and faculty offices are tied into a common network. Further, students may access this network from their dorms if they have their own personal computers. The instructional program to be described not only assumes a computer network, it is also designed specifically for a particular student body within a particular curriculum. Thus the context of the instruction is important for purposes of evaluation; although I feel that aspects of this approach are of broad applicability, some description of the students for whom it is intended is necessary. Ursinus is a private, residential liberal arts college located in suburban Philadelphia. The majority of the student body is drawn from the Delaware Valley. The average combined SAT score is approximately 1200.

Instruction in scaling takes place within the context of a course called Research Methods. The course is required of all student majors and minors, and is designed to be taken as the second course in the major, immediately following the completion of the general introductory course. Thus the majority of the students are sophomores, although twenty to twenty-percent usually are upper classmen. The course is conceptualized as an introduction to research methodology and assumes no prior familiarity with statistics or computers. Non-experimental research methods are covered in the course, which is divided into three conceptual units: field research, survey research, and correlational research. Experimental methodology is covered in another course.

As the three types of non-experimental research methodology are presented, they are used as starting points for consideration of other aspects of research. Topics considered during the course include the following: report writing, reliability and validity issues, research ethics, nature of the scientific method, measurement scales, operationalism, sampling, and descriptive and elementary inferential statistics. The course meets for four hours per week, three hours of which are lecture with the remaining hour utilized for laboratory work.

Each of the three approaches to research constitutes about a third of the course work. In the course of instruction in each of these methods, students are introduced to both topics of general importance and topics of particular importance for the method being considered. As part of this instruction for each method students design and execute a complete study; they generate a hypothesis and a fully operationalized research design, collect data, analyze it, and prepare a report in APA format.

The accompanying one hour lab is scheduled in a general purpose computer lab area, with a computer for each student. The computers are part of a larger campus network. This allows access to SPSS Student Ware (the software package used in the course), as well as local e-mail capability. Laboratory instruction focuses on data analysis by means of statistical software, as well as research design and instrument development.

C: TEACHING PSYCHOMETRIC SCALING

Instruction in psychometric scaling is included in the final unit, the correlational method. The students' task in this unit is to design a correlational study in which they administer several psychometric scales in order to examine possible relationships between the factors or variables being measured. For the purpose of this study students have access to existing scales (*e.g.* Locus of Control, Beck Depression Inventory, Bem Androgyny Scale) which they may incorporate into the research. They must, however, develop and include their own psychometric scales as well. In point of fact, I require both as a means of dealing with the concept of convergent validity.

In my initial attempts to teach this material, I did not ask students to develop their own scales. It quickly became apparent to me, however, that for students at this level presentation of material regarding scaling led to rote learning with little or no appreciation for the design issues, much less the conceptual underpinning of the various methods of scale development. Good students were able to tell me the exact steps to be used in generating a Thurstone Equal Interval Appearing Scale, but showed little understanding of why these steps were necessary or how the methodology related to a scale such as the Locus of Control Scale. For this reason it seemed to me to be desirable to involve students in every step of scale development from operationalizing a concept to final item selection.

My reasons for this decision are not complex. The emphasis on implementing instruction that employs active participatory learning in the past decade or so has been pervasive, and you are all familiar with the arguments. None-the-less, teaching scaling to new majors as part of their first course in research methodology offers a challenge for which a particularly compelling argument may be made for active learning. Students with a very limited exposure to psychology are still operating cognitively in a very concrete fashion, often with more than a few misconceptions about what they are doing and why they are doing it. Although the reasoning underlying a Thurstone scale may seem transparent to the more sophisticated and advanced student, when it is presented to the novice in an abstract fashion, particularly if it is divorced from context, it may be largely inaccessible cognitively necessitating rote learning on the part of even very good students.

However, when students move through each step of the process with the concrete goal of operationalizing or scaling a particular concept, the entire task becomes cognitively accessible precisely because it is concrete. Particularly if there has been prior discussion of reliability and validity issues, I find that students are extremely acute in their questioning of the validity of potential items. If they are engaged in dealing with the problem of selecting a group of items with the best possible reliability and validity characteristics and they have this 'set' from the beginning, then the logic behind the development process becomes much more apparent.

In my initial attempts to carry this through I had students design a Thurstone type scale. You will remember that a Thurstone type scale consists of a small number of items (typically 10 or less) each item of which corresponds as closely as possible to a scaled integer value of the concept. That is, given a concept scaled from one to ten, there will be ten scale items each of which is as close as possible to an integer value, the best possible '1' item, etc. I reasoned that if students could develop an understanding of this approach they would be able to easily transfer their understanding to other scale types as well. Informal observation at the time indicated that this was the case. Student understanding of the conceptual issues underlying scale development increased dramatically as a result of this exercise, at least as indicated by their test performance and research reports.

Such gains are not without cost of course. Standard text book presentations of scale development uniformly stress how time consuming and difficult the task is, and not without reason. It is arduous for a single investigator; to coordinate the activities of twenty student 'investigators' adds one more level of demand to an already arduous task. To call this instruction labor intensive is a conservative description.

Remember that to construct a Thurstone type scale the following steps are necessary. A large pool of potential items must be generated; the accepted minimum is 100 items. Each of the items must then be rated by each of a minimum of twenty raters. The resulting ratings are then incorporated into a data file, and means and standard deviations are obtained for each item. These statistics can then be used for item selection. What makes this feasible at all as part of the course work is that the students generate the items and serve as raters. For the instructor this is an obvious savings, but in turn the instructor is faced with the considerable problem of collecting and collating materials, distributing them, collecting ratings, analyzing them, and redistributing the rated items. My estimate is that construction of each scale demanded approximately eight to ten extra-instructional hours of time. This time is spent in editing, typing, reproduction, *etc.* At least some of this can easily be handled by student assistants, but because of time demands, not infrequently I found that I had to do it myself.

While I was convinced that the exercise was an extremely valuable one from a pedagogical viewpoint, the time demands raised questions about the cost benefit ratio. For that reason I began to deliberately ask how the task might be accomplished more efficiently with little or no sacrifice in instructional quality. What follows is my solution to the problem.

C. COMPUTER ASSISTED SCALE DEVELOPMENT

Scale development takes place over the course of approximately three weeks, although it does not require more that two hours of instructional time to accomplish. It requires a number of sequential steps as outlined below. The task remains the same, with the time savings being effected by utilization of readily available computer technology.

1. Selection of a concept to be scaled.

In the course of a regular class meeting students chose a concept to be scaled, and are given instruction in preparing potential scale items.

2. Item Pool Generation.

Prior to the weekly lab students are told to individually prepare five items apiece and to bring these potential items to the lab. During this first lab meeting, further material is presented regarding item preparation and selection, and then students in small groups critique each others items checking for clarity, face validity, spelling, etc. Following the critique, students do any necessary revision of their individual items. Once they are satisfied with their items, they then use campus computer network to e-mail the items to me.

Previously students handed in handwritten items which were collated and typed by a student assistant. This typically took approximately two hours. By having the items e-mailed, much of this labor is eliminated. One of my lab assistants simply works from my office. The assistant downloads the individual student item text files, strips the headings, and combines them into a single text file. This process typically takes no more than a half hour.

3. Item ratings.

Within a day after the lab, the items are circulated so that the students can each rate them as they were instructed to do. Circulation is again by e-mail. The item pool also contains specific instructions as to how the resulting ratings are to be returned. Specifically, each student is to e-mail me a message with the body consisting solely of a 10 by 10 data matrix (assuming 100 items to be rated), with each cell representing an individual rating. The lab assistant again downloads the resulting messages, strips the headings, and incorporates the ratings into a single data file. Again this process requires approximately one half hour, as opposed to the two or more hours that it took to create the data file by hand.

4. Statistical Description of the Items.

Currently I not only create the system file, but also actually carry out the data analysis. Conceptually, there is no reason why the students could not do this themselves since at this point they are very familiar with the necessary SPSS procedures. But because they are using the Studentware version of SPSS which is limited to data files with no more than 20 variables this is not currently feasible. I hope to soon be able to use a full scale version of SPSS which will allow this step to be done by students as well.

5. Item selection.

The resulting analysis is circulated to students. The lab assistant simply prepares a text file containing the mean and standard deviation for each item which is then uploaded and e-mailed to the students prior to next lab. During the lab itself, students are given a short lecture on the criteria for item selection. Then each student individually goes through the item pool selecting the items they deem most appropriate for scale inclusion. The results of this are shared, and form a basis for a concluding discussion of the subjectivity inherent in the methodology.

I estimate that the total amount of time spent on the exercise is now no more that two hours to two and a half hours with only about a half hour of my personal time needed. The majority of time saved was formerly spent on collating and typing materials, duplicating, and distributing. By using the e-mail facility all of this is eliminated. Students do much of their own editing, and no typing or other preparation is required. As a result I have expanded the exercise such that students now prepare two scales: both the original Thurstone type scale and now a Likert scale as well. I find that this can typically be accomplished in less than half the amount of time it formerly took for one scale, and with no more that an hour of my personal attention.

D. CONCLUSIONS

There is nothing inherently new in the process I have described above. The process of scale development remains unchanged. And I certainly can take no credit for the 'participatory learning' approach. What is new is using computer technology in a somewhat novel way. What enables the approach described is e-mail. Like my students, I had thought of e-mail primarily in terms of corresponding with individuals at distant sites. Then I became accustomed to communicating with colleagues on campus using e-mail. A year ago, I realized that it had also become entirely feasible to communicate with students using e-mail as well. This realization was forced on my, when I began to wonder why students were hanging around the lab after handing in their assignments. Looking over shoulders established that they were using the e-mail capabilities. I therefore began to issue electronic syllabi (easily updatable), send class announcements and updates, post new assignments and reminders, *etc*. using e-mail. From this it was only a short conceptual step to using e-mail as a communications tool within the laboratory context, thus distributing the work load across the students themselves and freeing me and my assistants to do other tasks. My only claim to originality is a mildly innovative use for an established computer utility.

STEPS IN PREPARING A PSYCHOMETRIC SCALE

STEP 1

1. Choose concept to be scaled
2. Instructions in item preparation

STEP 2

1. Prepare potential items
2. Critique items in lab groups
3. E-mail items to instructor

STEP 3

1. Assistant downloads items, stripping headers
2. Combines items into master file
3. Master file e-mailed to students

STEP 4

1. Students rate each item in master file
2. Students e-mail ratings to instructor
3. Assistant downloads ratings, stripping headers
4. Ratings combined into master data file

STEP 5

1. Item means and standard deviations calculated
2. Item means and standard deviations compiled and e-mailed to students.
3. Students develop individual scale

Human Development or Developmental Psychology; That is the Question

or

What's In A Name?

Julie Guay-McIntyre, Ph.D.
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Human Development or Developmental Psychology; That is the Question

or

What's In A Name?

In developmental psychology, course content may vary with the context in which a particular course is taught. This is a particular example of a broader issue of the content of undergraduate psychology. The roundtable examines sources of the variety of developmental survey courses found under the headings of developmental psychology and human development.

I. Introduction to the problem and to the contexts under discussion.
Each of us has struggled with the content and method of delivery of human development in different academic contexts. These contexts included providing a foundation for the psychology major and service for professional programs in an undergraduate liberal arts setting. The professional programs included education, nursing, occupational and physical therapy. We asked:

- how do we customize content and pedagogy central to the study of development in these different contexts?
- What are the tensions that we experience around our attempts to adapt?

Identification of these tensions was a first step toward achieving a balance. Three tensions persisted across these contexts:

- Depth versus breadth
- Theory versus practical application
- Research findings versus personal experience as knowledge base.

II. Examination of the data: There is no consensus as to the minimal requirements necessary for content for human development. We examined a convenience sample of approximately 20 catalog descriptions and course syllabi looking for similarities and differences in content and delivery. The data represented a variety of institutions, both large and small, public and private. Surprisingly, large discrepancies were found in course content: age ranges included, topical vs. chronological coverage, and varied emphases from college to college and even between departments within colleges. (A poll of the roundtable audience echoed these findings.)

III. Pragmatic concerns are generated by these discrepancies for students transferring from one institution to another and/or seeking credit through examination--a registrar's nightmare. For example, different titles, whether for course or exam, may reflect identical content resulting in double counting.

Additionally, at our own institution, we disallow students taking both child psychology and human development for credit due to significant content overlap. However, students taking an applied human development course from a professional department are allowed to take the human development course offered by psychology because of the lack of developmental psychology content in the applied course.

IV. The discrepancies found within and across settings are generated by different interests, different expected outcomes, and different interpretations of essential contents. The following student comments are illustrative of these tensions:

> A psychology major asserted that "You study theory in child psychology, not in human development."
>
> A professional major protesting the discussion of theory in the course asserted, "PTs don't need depth."
>
> Another student commented "This is interesting, but what do we need to know for the test?"
>
> At the level of cross-department interactions, one developmental psychology professor was chastised for including chimp communication in her presentation of language acquisition to occupational therapy students: "Remember, this is a human development class, not a course on animals."

V. Balancing breadth and depth, theoretical and applied content, and research findings with personal experience seems to be a continuing struggle across teaching contexts. Does the perennial question "What do we need to know for the test" have different meanings in professional and liberal arts programs? Accountability has a different scope in professional training than in liberal arts education. Professionals need to know "the truth" because they are accountable for selecting appropriate treatment and intervention. When a professor says there is no "right" answer or points to the multitude of variables that may influence an effect, professional students can become both frustrated and angry and question the credibility of the professor. Both positions are understandable, but it is difficult to communicate across the boundaries. This heightens the contrast between "human growth and development" courses and the "research orientation" of developmental psychology courses.

While respecting these applied concerns, we have relied on a variety of teaching methods that foster the "liberal skills" (Hogan, 1991). These project assignments teach "liberal skills" and address the research vs. experience question.

Assignment	Liberal skills
Graduated approach to case study	Research, writing, and problem solving skills
Written reports of observation of behavior	Observation, writing, assessment skills
Interview adults about social roles; compare results to research literature	Interview/interpersonal skills, observation, thinking and writing
Clinical interview of children during field work.	Interview/interpersonal skills, thinking, writing.

VI. There is no consensus on the basic content of the developmental course. Because developmental study is an approach, contents can and do vary widely within and between colleges. A developmental framework which is the *sine qua non* may be useful in making determinations about whether a course is properly called developmental psychology, human development, or has some other label. We seem to be searching for a "core" of development that is present in the courses we teach within the psychology curriculum and that we export out when we teach "developmental psychology" in other programs. Teaching development outside a psychology program can offer new perspectives on the ways we teach development within psychology. Thus these tensions can be productive. Our experiences here suggested ways in which we can make our liberal arts psychology courses more accessible and more meaningful to students. This exploration has exposed our own egocentrism ("psycho-centrism?") and made us realize that when we speak of human development as psychologists, we do not all mean the same thing. This has led us to understand more acutely the need for a developmental framework.

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The Road to Understanding the Self is Paved with Yellow Bricks.

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Abstract

It is an easy task to attract students to a course on the social psychological study of the self thanks to the topic's inherent appeal. However, maintaining interest through coverage of the complex and highly empirical concepts of the area can be a struggle. This presentation discusses one exercise developed to maintain student involvement while increasing their understanding of the course material. The exercise is built upon treating the classic story, "The Wizard of Oz," as a metaphor for the self.

One of my favorite courses to teach is entitled "Advanced Topics in Social Psychology: The Self." Not only is the course subject a strong interest of mine, it also seems to inherently appeal to students as it is highly requested during registration. Either because of this interest, or despite it, I'm not sure which, the course illustrates well the themes of the 1996 Teaching of Psychology Conference, the struggles between content and process, and depth and breadth.

The social psychology of the self offers a wealth of information thanks to blossoming interest over the past twenty years. And because the area is social psychology, it tends toward the strongly empirical. I have found, therefore, that if I concentrate solely on disseminating content in all it's complexity, this material can be as dry as my front lawn when it suffers through a nine week drought, which, of course, leads to disaster--bored, uninvolved, and disappointed students. On the other hand, it is imperative that I cover all the foundational concepts if I am to attain the goal I set for the class: the development of a personality model, albeit a fledgling model, based on this material.

I have experimented with many teaching techniques and exercises in my struggle to maintain student interest and motivation while preserving my course goal. What I would like to describe is one exercise I use in this course to which students have responded well. While entertaining and engaging, the exercise serves multiple purposes: a) reviewing all the major theories and concepts covered to that point, b) moving students beyond surface recognition of these concepts toward a deeper understanding of their complexities, and c) working toward an initial awareness of the interplay between the concepts.

The exercise can actually take on many forms, and how it is conducted depends on the course and the instructor's preferences. However, the basic premise remains the same no matter what form is selected—we are to look at a classic film, not as a form of entertainment, but as a metaphor for the self. I ask students to observe the film's main character and the events that take place in her life with the goal of using their observations as illustrations of the concepts we have studied. The film is "The Wizard of Oz," and the character is Dorothy.

Having set this general goal, I distribute a list of the major concepts we have covered in the class (see Appendix 1) and we spend a few minutes in quick review. Next, I provide a handout (see Appendix 2) that describes a few ground rules for the exercise, and that also provides a list of questions to "kick start" students' analyses. Assured that students fully understand the exercises's intent, and with lists in hand, we begin to watch the film version of "The Wizard of Oz" during class.

The first programmatic difficulty to this exercise, as you might have anticipated, is that the movie's length prevents full viewing in one class session. Options I have considered are using two classes to view the film, shortening the film by presenting only the "overtly relevant" sequences, designating an evening time when I show the remainder of the film, and making a copy available for students to finish watching the film at their convenience. It is, of course, possible for students to simply rent the videotape at a local store, an alternative that has the added advantage of allowing repeated reviewing of film segments.

To encourage individual participation and greater idea generation, I ask students to work alone while making their first attempt at analysis. Later, I assign students to small groups so that they can pool their ideas through brainstorming. It is, of course, possible to skip working with small groups and bring the class together as a whole to discuss their interpretations.

As I stated earlier, how formally or informally the exercise is treated depends on the instructor's judgment and preferences. Intrinsic interest in and enjoyment of the exercise seems enough to motivate many students to carry through on their analyses without tying their work to an external evaluation. Using a more formal approach, it's possible to require that written accounts at both the individual and group analysis levels be turned in as part of a course grade.

The number of possible applications of self material to The Wizard of Oz can keep even the most motivated student searching for more, and the flexibility of interpretations of characters and events allows room for student creativity. In fact, the only parameter I establish for student responses is that each claim they make must be accompanied by a justification for the claim, a justification well founded in the self constructs we have covered.

Appendix 1

Self-Related Concepts Covered in Class

Motives

- control
- liking the self
- being liked by others

Individual Differences

- public self-consciousness
- private self-consciousness
- self-monitoring

Self Knowledge

- self-concept
- self-schema
- self-esteem
- self-efficacy
    - outcome expectancy
    - outcome value
- self-consistency theory
    - actual/own
    - actual/other
    - ideal/own
    - ideal/other
    - ought/own
    - ought/other
- undesired self

Self-Related Processes

- self-presentation/impression management
- self-perception
- social comparison theory
- self-discrepancy
- self-enhancing illusions
    - self-serving attributional bias
    - unrealistic optimism
    - unrealistic self-image
    - illusion of control
    - selective importance
    - selective exposure
    - selective attention
    - selective memory
- self-handicapping
- self-disparagement
- learned helplessness

Appendix 2

The Wizard of Oz: Dorothy's Adventure to Self-Unification

What's this exercise all about? Well, I'd like you to watch the movie, "The Wizard of Oz." Yes, it's a fun movie and I hope you enjoy it. But don't watch it solely for entertainment. Watch it as if it were written as an elaborage illustration of the self literature we've been studying.

First, a few ground rules:

- Your goal is to apply the self-related concepts in the distributed list to the 'Wizard of Oz," conjuring up as many examples of each as your imagination will allow. The number of possible applications seems endless, so feel free to be as creative as you'd like.
- There are no right or wrong answers, per se. At the same time, each claim you make should be accompanied by a justification supporting it—a justification well founded in the self constructs we have covered.
- I suggest you approach the movie using the time sequence as given. In this way, Dorothy's journey remains intact.
- This exercise is not meant to be a literary analysis of "The Wizard of Oz," nor does it suggest that Lyman Frank Baum intended his story to have any relation whatsoever to the self literature. Sometimes an exercise is just an exercise.

I'd like to start by setting the scene, giving you a kick start as it were. I'll begin with a proposal, and follow this with questions for your consideration. Please use these only as *initial* guides. In other words, don't stop your analysis with answers to these quesitons.

My proposal:

> It's hard to miss the fact that the film begins and ends in black and white, while Dorothy's adventures in Oz are filmed in color. What do you think's going on there? A camera malfunction? The crew ran out of money while filming? The director's just trying to be artsy? Too practical. Think psychology of the self.
>
> To get you to the mindset of this exercise I'd like to propose that the black and white scenes represent mundane reality, Dorothy's unexciting, boring, teenage life, and all scenes portrayed in color are events taking place solely in Dorothy's imaginative unconscious. In addition, I propose that since Oz is a product of Dorothy's unconscious, all the characters found within represent some aspect of Dorothy. Yes, they can mirror people found in her everyday life, but since they are her fantasies, consider them projections of her wishes and desires, fears and anxieties.

On to the guiding questions.

Appendix 2

DOROTHY'S BORING REAL WORLD

- Who is Dorothy from Dorothy's point of view? What role(s) does she enact? What public image does she portray in the first scenes on the farm? What appear to be her desires, her frustrations?
- What are others' images of and expectations for Dorothy?
- What do you learn about Dorothy's hopes and dreams from the song "Somewhere Over the Rainbow?" Does her private self match her public self?
- How does Dorothy react to the threat of Miss Gulch, and what does this tell you about her?
- Have you made any speculations yet about Dorothy's level of general self-esteem or of her level of general self-efficacy from these opening scenes?
- What did it take to begin to move Dorothy toward self-unification?

DOROTHY'S FANTASY WORLD

- What does Dorothy say she wants, right from the beginning of her time in Oz? What self-motive does this represent?
- What parts of Dorothy's self might be represented by Oz's cast of characters?
  - -Glinda, the Good Witch of the North?
  - -The Wicked Witch of the East?
  - -The Munchkins?
  - -The Scarecrow?
  - -The Tin Man?
  - -The Cowardly Lion?
  - -The Wizard?
- Consider Dorothy's journey down the yellow brick road. She begins at Munchkin Land, travels through the woods, and emerges into the poppy fields ("You're out of the woods, you're out of the dark, you're out of the night. Step into the sun, step into the light, and open your eyes..."). What's going on here in relation to her self-unification? What do these situations represent to Dorothy?
- What does the Emerald City represent to Dorothy? What goes on there? What does she expect to have happen there? What happens to Dorothy and her companions before they are allow to visit the Wizard?
- The Wizard keeps himself hidden during Dorothy's initial visit, and he denies her wishes, sending her out to prove herself. What might be going on here?

Appendix 2

- Who are the more powerful characters in Dorothy's fantasy? Who are the weaker? Who triumphs in the end, successfully overcoming trials and tribulations?

- The Scarecrow, the Tin Man and the Cowardly Lion each *claim* to missing an important aspect of their personality. Do their actions match their words?

- What's the significance of Toto's discovery when the troop returns to visit the Wizard?

- Why is it important that the Wizard float off into the air in the end, and that he be replaced by Glinda?

- What's the significance of what Glinda reveals to Dorothy? What are those glass slippers all about, anyway?

BACK TO A HAPPIER, MORE FULFILLING REALITY

- How has Dorothy changed since being knocked unconscious?

Depth by Doing: Cooperative Research Projects in Social Psychology

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Abstract

Students worked together in groups of 3-5 to develop hypotheses, design simple correlational studies, and interpret results; they also wrote two individual papers. At the end of each semester, students rated their own and other members' contributions to the group project. Correlations showed that ratings of group members' contributions were significantly positively related to all of the ratings of the group experience, particularly to helpfulness and usefulness. Ratings of group members' contributions were related to three of the project variables: whether the project was worthwhile, project's contribution to learning, and subject's willingness to recommend the project to other students. Students with better grades rated themselves as contributing more to their groups, but ratings received by students from their group members were generally not higher among those who got good grades. Group size was negatively related to perceived usefulness and helpfulness of the group; subjects in larger groups also received lower ratings from others in their groups. Students commented that they gained a greater depth of understanding of the research process, even from such a simple project, by seeing it through from start to finish.

Depth by Doing: Cooperative Research Projects in Social Psychology

My students in social psychology seem to have (or gain) little understanding of research. Although I typically spend approximately 2-3 days lecturing on the topic and trying to encourage discussion, my past efforts seemed to meet with little success.

Brems (1994) recommended introducing students to research slowly and carefully. However, my own slow approach did not seem to be working, so I thought I would try a more drastic "immersion" technique to expose students to the entire research process. About half the students in my sections of social psychology are nonmajors, so I decided to use a cooperative learning approach (e.g., Kagan, 1992) to take advantage of the knowledge that some students might already have. Purdom and Kromrey (1995) report that cooperative learning is increasingly being used in college classrooms to promote academic achievement, increase students' participation, and encourage positive attitudes toward learning.

The students worked together to develop hypotheses, design simple correlational studies, and interpret results. They also wrote two individual papers as part of the project; writing is required in all of the upper division psychology classes at Buffalo State College, and tying research and writing together seemed a desirable goal.

Method

Participants

During the first semester, participants were 30 female and 11 male students. During the second semester, there were 28 female and 15 male students. All of them participated as part of normal class requirements.

Materials

A handout (see Appendix 1) was used to explain the first paper. The handout was revised for clarity between the two semesters; the final version is presented in the appendix. Two grading forms (see Appendix 2) listed specific criteria for evaluating the two papers students had to write. A sample paper of my own (shortened to be easier to read) in APA style was distributed to students, as well.

Finally, two short questionnaires were used to evaluate the contributions of the respondent and other group members (Appendix 3) and to evaluate the group experience and the project itself (Appendix 4).

Procedure

Students worked in groups of 3-5 on a simple class research project in social behavior. The project as a whole was worth 100 points (30 points for Paper 1, 60 points for Paper 2, and 10 points from ratings of one's contribution to the group by other members), which was 20% of the course grade.

Groups were formed during the first semester by distributing a form asking students to check some of their interests in social psychology, and to indicate the names of others in the class they would like to be in their group. I took these preferences into account in forming the groups. However, during the second semester, I explicitly considered students' schedules. I asked students who had restricted schedules to come to one area of the classroom, where they sought others with similar schedules. The remaining students were assigned to groups based on their preferences as in the first semester.

Group members first had to work together to derive a common topic. A handout (see Appendix 1) explaining the project was distributed. Each group member then chose a research question on one facet of the common topic; the research question had to be testable using a questionnaire. For example, one group was interested in the common topic of self-esteem. Each group member then selected one facet of self-esteem to examine empirically; e.g., one member examined whether there was a sex difference in self-esteem, another studied the correlation between self-esteem and extraversion, etc. Groups were required to meet with me to clarify their topics and research questions. A few groups designed a simple experiment using scenarios on two different versions of the questionnaire.

Next, the students wrote Paper 1 individually. The grading form (see Appendix 2) was distributed well in advance of the due date. The first paper (about 2-3 pages in length) described the purpose of the simple study, included a very brief survey of the literature, and stated the hypothesis. It was an abbreviated introduction of an APA-style paper.

I then compiled a single long questionnaire using all students' questions. A sample page from the students' questionnaires from each of the two semesters is presented in Appendix 5. The questionnaires were completed by the students and returned. A few of the students' friends and family members asked to participate and were allowed to do so. Anonymity was assured for all respondents.

I carried out all of the data analyses, and distributed print-outs to all group members. The printouts were customized for each group, although all printouts began with the same information (e.g., frequencies for sex of subject, etc.). I spent a class session explaining the basics of the printouts. Group members were invited to help each other with interpretation of the data, and groups were also encouraged to meet with me to further their understanding of the results.

The second paper was an extension of the first, with the addition of abstract, method, results, and discussion. Once more, a grading form (see Appendix 2) with specific criteria for evaluation was distributed well in advance of the due date. In addition, a sample paper illustrating format was given to students.

At the end of the semester, students rated their own and other members' contributions to the group project (see Appendix 3). They rated their group experience on five scales, such as whether it was useful and helpful (see Appendix 4). They also rated the project itself on nine scales, such as how much they learned, whether they would recommend the project to other students, etc. These ratings were not anonymous, but students were assured that their project ratings would not be examined until after the final grades were determined.

Results and Discussion

The means and standard deviations for the group and project ratings are presented in Table 1. Results showed that the group experience received generally positive, although not glowing, ratings. The project itself received neutral to somewhat positive ratings. Very few differences were found from one semester to the next. Only two of the 14 variables yielded significant differences due to semester. Students rated the project as significantly more clear $t(82) = 3.05$., $p < .003$, in the second semester ($X = 4.86$) compared to the first ($X = 3.78$). Similarly, they rated the project as significantly more understandable, $t(82) = 3.03$., $p < .003$, in the second semester ($X = 5.40$) compared to the first ($X = 4.37$). No significant sex differences were found on any of the questionnaire variables.

Effects of the group

The number of members in each group varied from 3 to 5. The average contribution score assigned to fellow group members was computed; different formulas were used for 3-, 4-, and 5-person groups. To examine whether subjects perceived themselves as contributing more or less than their fellow group members, a "self-group discrepancy" score was computed by taking a subject's self-rating and subtracting the average of the other group members' ratings.

Correlations (see Table 2) showed that ratings of group members' contributions were significantly positively related to all of the ratings of the group experience, particularly to helpfulness and usefulness. Clearly, good group members were very important to the success of the cooperative learning experience.

In addition, ratings of group members' contributions were related to three of the project variables: whether the project was worthwhile, project's contribution to learning, and subject's willingness to recommend the project to other students. It is clear from these results that the "quality" of other members' contributions was related to several important dimensions of the project.

Self-group discrepancy scores ranged from -5.0 to +5.0. Negative scores indicated that subjects rated themselves lower than they rated their average group member; there were 18 students (21.4%) with negative scores. There were 35 students (41.7%) with self-group discrepancy scores of 0, indicating that their contributions were equal to those of the average group member. Positive scores indicated that subjects rated themselves higher than the average member of their group; 31 students (36.9%) had positive scores.

The self-group discrepancy scores had negative correlations with all of the questionnaire variables, indicating that those subjects who rated themselves higher than the group generally gave the group and the project lower ratings. As may be seen in Table 2, this general tendency was significant for four of the group variables and three of the project variables.

Table 2 also shows that group size was significantly negatively related to two of the group variables (useful and helpful), but not significantly related to any of the project variables.

Effects of grades

Students' grades were correlated with the other variables. The grades used were total exam percentage (for four exams), paper 1 grade, paper 2 grade, and the average rating received by subjects from their group members (the latter three grades formed the project grade).

Exam percentage and grade on paper 1 were not significantly related to any of the questionnaire variables (all rs $< .20$). Paper 2 grades were significantly related to three of the questionnaire variables: those with higher grades on Paper 2 found the project more clear ($r(82) = .35$, $p < .01$) and understandable ($r(82) = .31$, $p < .01$), and learned more about research, ($r(82) = .26$, $p < .05$). The average rating received by subjects from their group members was significantly related to only one questionnaire variable, learning, $r(82) = .22$, $p < .05$.

Grades were consistently related to self-ratings of contribution to the group, however. Better students rated themselves as contributing more to their groups, with higher exam grades, $r(82) = .30$, $p < .01$, paper 1 grades, $r(82) = .38$, $p < .01$, and paper 2 grades, $r(82) = .25$, $p < .05$, among those with higher self-ratings. However, the average ratings received by students *from* their group members were generally not higher among those who got good grades, except for paper 2, on which a higher grade was associated with a better group rating, $r(82) = .25$, $p < .05$.

Subjects in larger groups received lower ratings from others in their groups, $r(82) = -.26$, $p < .05$. The average rating subjects gave others was positively related to the rating they received, $r(82) = .25$, $p < .05$.

Other issues

Students' open-ended comments at the end of the first semester indicated that they sometimes had trouble finding time to meet with their groups. Thus, as discussed in the method section above, I took restricted schedules into account during the formation of the groups in the second semester. Comments from the second semester showed that far fewer students had difficulty finding time to meet with their groups.

I tried to reduce social loafing (e.g., Latane, Williams & Harkins, 1979; Karau & Williams, 1993) in the present study in two ways: by making the papers individually-graded, and by having 10 points of the students' project grade dependent upon the ratings of the other group members. However, neither of these two attempts completely eliminated the negative effect of larger groups. Informal comments from students, combined with some significant negative effects of group size, suggested that the optimal group size for such a project is smaller (perhaps 3, no more than 4, members).

These data show that cooperative learning experiences can be significantly affected by the "quality" of the other group members: a group member who contributes poorly decreases the worth of the entire project for the remaining members. The literature on cooperative learning generally addresses its positive aspects; for example, Purdom and Kromrey (1995) note that cooperative learning methods are increasingly being used in college classrooms. However, a few studies have discussed possible negative effects of cooperative learning. For example, Tomlinson (1994) notes that gifted middle school students may not benefit from cooperative learning. Other studies (e.g., Peterson, 1993; Battistich, Solomon, & Delucchi, 1993) have mentioned that the quality of the group interaction is critical in the success of cooperative learning. Peterson found that high-achieving students may suffer negative motivational consequences in cooperative learning tasks.

On a positive note, students seemed to gain a "feel" for the research process as a result of this project. Although many approached the project with trepidation, several students seemed surprised that it was easier than they expected. Students also commented that they gained a greater depth of understanding of the research process even from such a simple project by seeing it through from start to finish. Although I collected no data on major status, majors seemed to appreciate the project more than non-majors.

Finally, from a personal standpoint, the process was quite time-consuming. I spent many hours meeting with groups, helping them choose and narrow down topics, going over the printouts, helping students generate keywords for PsycLit, etc. I found the process rewarding, however, and got to know my students better than in most semesters.

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Table 1

Means and Standard Deviations for Evaluations of the Group Experience and the Project Itself

Dependent Variables

Group Ratings	Mean	St. Dev.
Useful	6.41	2.56
Not frustrating	5.40	2.66
Helpful	6.39	2.37
Contributed to writing paper	5.80	2.50
Contributed to understanding project	6.70	1.99
Project Ratings		
Fun +	4.48	1.90
Interesting +	4.87	1.84
Worthwhile +	4.87	1.79
Clear +	4.33	1.70
Understandable +	4.89	1.62
"How much...learn"	4.14	1.16
"Educational tool"	4.09	1.28
"Recommend...." +	4.89	1.84
"Understanding of research..."	4.31	1.18

Note. Group ratings were made on a 9-point scale. For the project ratings, items marked with a + were answered on 7-point scales. The remainder used 6-point scales. Items were recoded if necessary so that high scores were more positive on all variables.

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Table 2

Correlations Between Ratings of Group, Number in Group, Self-Group Discrepancy with Evaluations of the Group and the Project Itself

Dependent Variables	Avg. Group Rating	Self-Group Discrepancy	Number in Group
Group Ratings			
Useful	.52**	-.24*	-.31
Not frustrating	.35**	-.27*	-.20
Helpful	.42**	-.26*	-.23*
Contributed to writing paper	.31**	-.20	-.16
Contributed to understanding project	.36**	-.24*	-.19
Project Ratings			
Fun	.20	-.17	-.11
Interesting	.14	-.10	-.13
Worthwhile	.26*	-.21	-.13
Clear	.15	-.22*	.03
Understandable	.18	-.15	.03
"How much...learn"	.28*	-.27*	-.08
"Educational tool"	.15	-.16	.02
"Recommend...."	.29**	-.22*	-.06
"Understanding of research..."	.14	-.07	.04

Note. * $p < .05$. ** $p < .01$. All df = 82.

PSY 325 Class Project: Step 1

FIRST

You will be working with your group to come up with a basic topic related to social psychology that can be examined by means of a questionnaire. Choose something that all of the group members are interested in. It will be necessary to narrow down your original topic considerably. Here are some examples of topic ideas:

- Trusting others
- One-night stands
- Eyewitness testimony
- Jealousy in relationships
- Reported aggressiveness
- Self-esteem
- Playfulness in childhood
- Prejudice against homosexuals
- Etc.

If you are totally clueless, make an appointment to see me.

SECOND

Go to the library and find some studies that are relevant to your topic. You may use Psychological Abstracts or its computerized version, called PsycLit. Your group should find roughly four or five relevant, fairly recent research articles. Some journals in social psychology to check:

Journal of Personality and Social Psychology
Personality and Social Psychology Bulletin
Journal of Personality
Social Psychology Quarterly
Journal of Social Behavior and Personality
Journal of Experimental Social Psychology
Journal of Applied Social Psychology
Journal of Social Psychology
Sex Roles
Psychology of Women Quarterly
Social Cognition

Other journals will become relevant depending upon your topic (e.g., journals devoted to issues of homosexuality, race, etc.)

THIRD

After everyone in your group has read and discussed the articles, decide what you want to do your OWN little study on. Perhaps you are interested in sex differences. What hypothesis do you want to test? Hypotheses are originally phrased in the form of a question, which you then turn into a specific prediction about what you expect to happen when you test the idea. For example, "I predict that women will have higher trust scores than men."

Everyone in your group should have a slightly different question, based on the same general topic (e.g., sex differences in trust, is trust related to self-esteem?, are trusting people less jealous?, etc.). But follow the KISS principle (Keep It Simple, Student).

FOURTH

Write Paper 1. It will be a short (about 2-3 page) version of the introduction of an APA-style paper. In it, you include the following:

APA-Style Introduction

- Presents the general problem under study. This is a general statement telling what the topic of the study is.
- Develops the background. Summarizes the **relevant** literature you have found in your search. Includes some details of how each study was conducted and what the results were.
- Demonstrates the **logical connection** between previous research and the study you plan to do.
- States the **specific purpose** of your study.
- Includes **operational definitions** of variables (exactly how will you measure your concepts?). Attach an appendix with the exact wording of the questions, exact wording of scenario, etc.
- Includes formal statement of hypothesis(es).

In grading, points will be given for each of the bullets above. Each person in the group writes his/her own paper, because each person is doing a slightly different study.

Paper 1 will be the start (the introduction) of Paper 2. The second paper will be written AFTER we collect data and test your hypothesis, so it will include a Method section, a Results section, and a Discussion section. More information on Paper 2 (and a sample paper) will be distributed later.

Appendix 2

PSY 325 Grading Form Paper 1 **Name____________________**

__	(3)	Presents the general problem under study ... What is the topic of the study?
__	(8)	Develops the background. Summarizes the **relevant** literature, with some details.
__	(5)	Demonstrates the logical connection between previous research and the study you plan to do.
__	(3)	States the specific purpose of your study.
__	(6)	Includes operational definitions of variables (exactly how will you measure your concepts?). Attach an appendix with the exact wording of the questions, exact wording of scenario, etc.
__	(5)	Includes formal statement of hypothesis(es)
__	TOTAL (30 points maximum)	

PSY 325 Grading Form Paper 2 **Name____________________**

__	(3)	Title page (good descriptive title?)
__	(5)	Abstract (summarizes the study)
__	(12)	Introduction Develops the background. Summarizes the **relevant** literature. States the specific purpose of your study. Demonstrates a logical connection between previous research and your study. Includes formal statement of hypothesis(es)
__	(10)	Method Participants: tells who they were, gives specifics Materials: describes your questions Procedure: explained clearly
__	(5)	Results Demonstrates that you understand what was found Statistics presented as per examples
__	(10)	Discussion Statement of support or nonsupport of hypothesis Relates your study to the literature Discusses limitations of study Suggestions for future research
__	(5)	References (adequate number of relevant sources)
__	(7)	Grammar, spelling, sentence construction
__	(3)	Format: followed format of sample paper
___	TOTAL	

Appendix 3

Your name____

Ratings of each group member will be determined by averaging across the other two, three, or four people in the group to yield the number of points earned. Your own self-ratings will not be part of your grade.

Please rate your own contribution to your group on this scale:

contributed 1 2 3 4 5 6 7 8 9 10 contributed
very little a great deal

Please rate the contribution of each member of your group on the same scale:

Group member #1 name_________________________________

contributed 1 2 3 4 5 6 7 8 9 10 contributed
very little a great deal

Group member #2 name_________________________________

contributed 1 2 3 4 5 6 7 8 9 10 contributed
very little a great deal

Group member #3 name_________________________________

contributed 1 2 3 4 5 6 7 8 9 10 contributed
very little a great deal

Group member #4 name_________________________________

contributed 1 2 3 4 5 6 7 8 9 10 contributed
very little a great deal

PLEASE GO ON TO THE BACK -->

Appendix 4

These ratings will NOT be examined until after grades are posted, so please be completely honest in your evaluation of the class project. Your ratings will not affect your grade in the class!

Please rate your experience with your group on the following scales:

1. useful 1 2 3 4 5 6 7 8 9 useless

2. frustrating 1 2 3 4 5 6 7 8 9 not frustrating

3. helpful 1 2 3 4 5 6 7 8 9 not helpful

4. contributed to writing paper 1 2 3 4 5 6 7 8 9 did not contribute to writing paper

5. contributed to understanding of the project 1 2 3 4 5 6 7 8 9 did not contribute to understanding of the project

Please rate the class project on the following scales:

6. not fun 1 2 3 4 5 6 7 fun

7. interesting 1 2 3 4 5 6 7 boring

8. worthwhile 1 2 3 4 5 6 7 worthless

9. confusing 1 2 3 4 5 6 7 clear

10. understandable 1 2 3 4 5 6 7 mysterious

11. How much did you learn from the project?

nothing at all	just a little	some	a moderate amount	quite a bit	a great deal
1	2	3	4	5	6

12. To what extent was the class project a valuable educational tool?

not at all	just a little	some	a moderate amount	quite a bit	a great deal
1	2	3	4	5	6

13. Would you recommend that other students do such a project in this course?
definitely no 1 2 3 4 5 6 7 definitely yes

14. To what extent did this exercise contribute to your understanding of research in social psychology?

not at all	just a little	some	a moderate amount	quite a bit	a great deal
1	2	3	4	5	6

COMMENTS:

THANK YOU!

Appendix 5

BEFORE YOU BEGIN: Version 1

A. Please record your sex and date of birth in the proper spaces on the answer sheet.
B. Please record your Version Number in Special Code K on the answer sheet.

Your answers to the following questions will be **completely anonymous**. Please respond honestly. Please work through the questionnaire one page at a time, reading each question or scenario carefully.

Please answer the first questions using this scale:

Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	2	3	4	5

1. I am an aggressive person.

2. Members of my family are aggressive.

3. I watched a lot of violence on TV as a child.

4. My friends influence me a great deal.

5. My friends are aggressive.

6. What is your average alcohol consumption per week (number of drinks)?

none	1-2	3-5	6-8	9-11	12 or more
1	2	3	4	5	6

7. How many times in the past have you acted aggressively toward another individual while under the influence of alcohol?

never	once	2-3 times	3-4 times	5-6 times	7 or more times
1	2	3	4	5	6

8. Were you ever abused as a child?
   1 No
   2 Yes, verbal abuse
   3 Yes, physical abuse (may include verbal)

Suppose you are the boss in a high status company. Chris is one of your employees. She is 5'5" tall, attractive, dependable, a good worker, and has been with the company for ten years. Chris is due for a raise. What are the odds that she will receive a raise?

9. Very high	Above average	Average	Low	Very low
1	2	3	4	5

You were just introduced to a man named Steve at a party. He has dark hair, blue eyes and a great smile. He is 5' 4" tall, dressed well and upon further discussion you find that he is a successful corporate attorney.
(Women) How likely are you to date him if he asks?
(Men) How likely do you think it is that women will want to date him?

10. Definitely	Very Likely	Maybe	Probably not	Definitely not
1	2	3	4	5

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TEACHING THE HISTORY OF PSYCHOLOGY IN CONTEXT

or

DEPTH WITHOUT BREADTH LEADS TO 'SHALLOW' LEARNING

by

Howard M. Reid, Ph.D. and John B. Morganti, Ph.D.
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Abstract

This presentation reports an effort to modify the History and Systems of Psychology course so that a social, political and disciplinary context is prominently provided throughout the semester. This approach grew out of an examination of the extent to which History and Systems texts provided breath versus depth for five significant events/movements. It was found that, with the exception of Freud and the birth of Psychoanalysis, and Gestalt Psychology's loss of cohesion, the texts concentrated upon psychological antecedents at the expense of broader social and philosophical influences. The negative consequences of this inward orientation, as well as the specific pedagogical benefits of steps being taken to counteract this narrow interpretation, are discussed.

A substantial consensus exists among Psychology faculty and undergraduate majors that a history and systems course provides a valuable perspective for organizing the discipline. However, even a cursory examination of current texts reveals a variety of similarities and differences in approach among them. One of the most obvious is that there are two dominant perspectives on when the review of antecedents of our discipline should begin. One extends their review back to Greek Philosophy (e.g. Brennan) while the other begins with a review of 17th century science and philosophy as their point of origin (e.g. Schultz and Schultz). Once either review reaches the formal founding of Experimental Psychology with Wundt, however, most texts then proceed with a "systems" or "schools" orientation (e.g. Functionalism, Psychoanalysis, etc) that culminates in a discussion of the "breakdown" of the schools/systems and updates the reader on the "current" state of Psychology. Some texts attempt to provide the reader with a substantial amount of information on the "context" in which the antecedents of the discipline emerged (e.g. "the Age of Reason") and early schools developed (e.g. "Scientific" psychology as originating in universities while applied psychologies such as Freudian Psychoanalysis emerged in a more clinical setting). No current texts, however, appear to consistently provide enough coverage of context to anchor developments throughout the history of psychology in a way that helps the student identify, organize, and remember key developments, theories, etc.

To test the validity of this observation, we reviewed ten undergraduate history and systems texts' (Table 1) coverage of five significant psychological developments to determine the extent to which they are discussed within a broad philosophical/scientific, social/political, and/or psychological/personal context. The five developments were: Freud and the birth of Psychoanalysis, Pavlov's systematic examination of classical conditioning, Gestalt Psychology's loss of cohesion, the rise in popularity of IQ testing and the post

WWII acceptance of the scientist - practitioner model of clinical training. Each text's coverage of the context of these five areas was rated on a four-point scale (very complete, adequate, minimal or non-existent) for each of three dimensions of coverage of context (philosophical/scientific, social/political, and psychological/personal). These results are summarized (across the ten texts) in Table 2. Though the texts' coverage varied substantially, of the five developments examined, we judged the overall level of contextual information supplied to be relatively strong for both "Freud and the birth of psychoanalysis" as well as for "Gestalt Psychology's loss of cohesion". The coverage of "Pavlov's systematic examination of classical conditioning" was considerably weaker and only minimal contextual information was provided for the "rise of IQ testing" or the "post WWII acceptance of the scientist-practitioner model of clinical training". In fact, we found that a number of texts did not even address the issue of clinical training. It appears, therefore, that the selected texts generally emphasize the history of the major systems of psychology rather than applied impacts/implications.

An examination of Table 2 also permits some conclusions to be made concerning the areas of context which are being emphasized across the texts which were reviewed. For the five developments which were chosen, overall coverage of psychological/personal and philosophical/scientific contexts was judged to be "adequate". For "Freud and the birth of psychoanalysis" as well as "Gestalt Psychology's loss of cohesion" this coverage was quite strong. The coverage of socio-political influences was, overall, much weaker across texts. In fact, only in the case of "Gestalt Psychology's loss of cohesion" did the ratings approach the "adequate" level.

Our efforts to revise the teaching of history and systems are being piloted in a class this semester and are centered upon providing more complete coverage in the areas of weakness identified in our survey: the development of psychological applications, the need for greater emphasis upon socio-political influences, as well as strengthening, in a selective way, coverage of the philosophical/scientific and psychological/personal contexts. For example, when covering Pavlov's contributions, the relationships between his research in learning, the rise of communism in Russia and the importance of his international status as a Nobel prize recipient will be explored. The parallel discoveries of the American, Twitmeyer, will be noted, as well as the contextual reasons which led to his research being ignored. Similarly, we are stressing the role practical concerns and applied problems, as well as the contributions of such social/political issues as the eugenics movement, in our class discussion of the "rise of IQ testing".

In addition to revising and reorganizing lecture/discussion to reflect these varied contexts, we are developing a variety of handouts, timelines, class assignments/projects, revised exams, etc. designed to strengthen students' understanding of contextual factors. One hoped for consequence is that students would no longer view the history of psychology as being substantially divorced from the concurrent developments which occurred in 20th century science, politics, and philosophy.

Finally, we recognize that this incorporation of additional breadth of material raises an issue concerning whether the same depth of coverage can also be accomplished. We do not anticipate that this will be a major issue in history and systems since this course is specifically designed to provide an overview rather than in-depth coverage. Nevertheless, it is recognized that students will now not have as much reinforcement of text material in the lectures. We anticipate, however, that the additional contextual information will provide a much needed perspective for our students, the advantage of which will greatly outweigh any reduction in depth of coverage during the lecture.

TABLE 1

HISTORY AND SYSTEMS TEXTS RATED FOR COVERAGE OF CONTEXT

Author	Title	Date of Publication
Brennan, James F.	History & Systems of Psychology, 2nd ed.	1986
Bolles, Robert C.	The Story of Psychology: A Thematic History	1993
Hergenhahn, B.R.	An Introduction to the History of Psychology, 2nd ed.	1992
Hothersall, David	History of Psychology, 3rd ed.	1995
Kendler, Howard H.	Historical Foundations of Modern Psychology	1987
Leahey, Thomas H.	A History of Psychology, 3rd ed.	1992
Lundin, Robert W.	Theories & Systems of Psychology, 5th ed.	1996
Murray, David J.	A History of Western Psychology, 2nd ed.	1988
Schultz, Duane P. & Schultz, Sydney E.	A History of Modern Psychology, 5th ed.	1992
Viney, Wayne	A History of Psychology: Ideas and Content	1993

TABLE 2

Mean Rating of Coverage of Context Across Ten Selected History of Psychology Texts

	Area of Context			
Issue/Topic	Philosophical/ Scientific	Social/ Political	Psychological/ Personal	Mean of Row Ratings
Freud and birth of Psychoanalysis	3.4	1.9	3.5	2.9
Pavlov and Classical Conditioning	2.6	1.6	2.7	2.3
Gestalt Psychology's Loss of Cohesion	3.2	2.7	3.0	3.0
Rise of IQ Testing	1.9	1.6	2.3	1.9
Scientist-practitioner model of clinical training	1.6	1.6	2.1	1.8
Mean of column ratings	2.5	1.9	2.7	

Note: 1 = no context provided
2 = minimal context provided
3 = adequate context provided
4 = very complete context provided

Engaging Students in Large Lecture Classes

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132137

Abstract

A method of involuntary participation (calling on students who do not have their hands raised to answer questions) was developed which incorporated critical thinking questions and a non-intimidating questioning style. This method was employed in a large introduction to psychology course (over 100 students). An evaluation survey with both closed- and open-ended questions was distributed to students. Results of the closed-ended survey questions suggested that students prefer critical thinking questions to fact-based ones, that involuntary participation increased attentiveness and course preparation, but that involuntary participation did not lead to subsequent voluntary participation (raising one's hand to ask a question). Students' written evaluations supported these results, identified positive and negative effects of the method, and made suggestions for implementation this method in large lecture classes. Alternatives to this approach are discussed.

Engaging Students in Large Lecture Classes

Universities seem to have a love-hate relationship with large lecture courses (100-250 students). Due to the economic conditions of many institutions, offering a few large sections of a course with 100 or more students is an attractive alternative to offering many small sections (Gleason, 1986; Jenkins, 1991). However, as Jenkins (1991) explains, "Most psychologists with whom I have talked believe deep down that there is something wrong with large classes; at best, they are ineffective; at worst, large classes are somehow immoral." (p. 75)

Problems with Large Lecture Classes

One reason large courses are considered ineffective is that they inhibit both instructor-student, and student-student communication (Gleason, 1986). This is a major concern because dynamic communication among instructors and students is thought to facilitate the learning process (Christensen, 1989).

One way to encourage communication in large courses is to call on students who raise their hands to answer questions (voluntary participation). Although there are benefits to this approach (e.g., greater student-teacher interaction), there are also several problems with it. First, students are sometimes reluctant to raise their hands to answer questions. Consequently, many instructors supply answers to avoid long, silent pauses. Second, a strict response pattern is established early on--some students contribute often and are reinforced for sharing their ideas while others remain taciturn and are reinforced for *not* sharing their ideas (McDougall & Cordeiro, 1993). A third problem arises when instructors use voluntary participation to learn students' names. If only a minority of students participate, then the instructor can learn only a few names.

Involuntary Participation

An alternative way to ensure that more than just a few students speak in class, and that a strict response pattern does not form, is to call on students who do not have their hands raised, defined as involuntary participation or calling on students "at random" (e.g., without repetition). By increasing the number of students who speak in class, an instructor may increase the number of students' names learned as well. Involuntary participation has been said to encourage class preparation, to increase confidence in responding, and to have a positive affect on learning (Christensen, 1989; Mastropieri & Scruggs, 1987; McDougall & Cordeiro, 1992; 1993).

Despite these potential benefits, some instructors may not want to call on students at random because of a fear that students' comments would decrease the class' attentiveness (Gleason, 1986). Students may also become anxious about being called on at random if the purpose of questioning is to test factual knowledge of assigned readings--a kind of "oral pop quiz" (e.g., McDougall & Cordeiro, 1992; 1993).

We developed a method of involuntary participation as an alternative to McDougall and Cordeiro's (1992; 1993) method and assessed whether this method had an effect on students' in-class behavior. In our method, students were called on involuntarily to answer critical thinking questions (those that require opinions and explanations of experimental results or solutions to real-world issues in psychology) rather than to answer factual questions as McDougall and Cordeiro (1992; 1993) endorse. The development of the questions was informed by the Immersion Approach to Psychological Instruction described by Gray (1993) who argues that instructors should develop lectures and discussion questions that allow students to think critically about science. To address the possibility that students would be anxious about speaking in a large class, we tried to make the interaction more personal (and hopefully less intimidating) by addressing students by their first name, by giving students adequate time to formulate their answers, and by allowing students to refuse to answer questions.

We surveyed students' opinions about the use of critical thinking questions. Additionally, based on Gleason (1986), we investigated whether or not students believed that involuntary participation led them to be more attentive in class or to prepare more for class because these behaviors could have a positive impact on learning. For those students who had been called on at random, we assessed whether this experience served as an "ice breaker" leading to subsequent voluntarily participation because such behavior could have an indirect effect on learning by increasing students' involvement in the material covered in class. We also gave students an opportunity to evaluate the technique overall.

Questioning Technique

Students were asked critical thinking questions at the beginning of each lecture. For example, at the beginning of an introductory lecture on mind-brain relationships, a neuropsychological case study was described and a student was asked at random, "(Name of student), this case study shows that damage to the mind-brain can impair some abilities while leaving others intact. What does this finding tell us about how the brain may be organized?" After the student responds, a new student is selected to follow-up on his or her peer's comment. In this case, the students' answers were used as a basis for explaining the Modularity of Mind Hypothesis (Fodor, 1983). Such questioning lasted approximately 5 - 7 minutes. (Although we did not evaluate this claim explicitly, it was thought that asking questions at the beginning of lecture would increase students' intrinsic interest in the subject matter because they would want to find out whether their ideas were supported by research findings covered in lecture as suggested by Frederick (1986)).

Queries were never prefaced by the cue "What would you say if you saw this question on a test?" as suggested by (Gleason, 1986) because this cue may communicate to students that they should learn the material to do well on exams rather than learn the material because it is inherently interesting and applicable to their lives (Conti, Amabile, & Pollak (in press); Lepper & Green, 1978; Tuckman, 1991).

With regard to questioning style, students were given adequate time to formulate an answer to a question and were allowed to refuse to answer a question. If a student's answer was roundabout or spoken softly, his or her answer was carefully reworded or amplified.

Over the course of the semester, the instructor (GM) called on students at random 1-5 times per class (M=3.0). This was accomplished by reading names from a course list without repetition.

Evaluation

Respondents

One hundred and twenty-four, first-year and sophomore students (74 females, 50 males) in an introduction to psychology course voluntarily filled out a survey as part of an end-of-semester course evaluation. Of these, sixty students (31 females, 29 males) indicated that they participated involuntarily.

Method

Surveys were distributed in small (30 student) discussion sections. Although discussion leaders passed out the surveys, they were not present when students filled it out. A student volunteer collected the completed surveys.

Survey

A three-item evaluation survey was developed. For each item, students circled "agree", "disagree", or "not sure/don't know". To evaluate the use of critical thinking questions, students were asked, "I would prefer instructors to call on students at random in large classes to answer critical thinking questions rather than fact-based ones." To assess whether students believed this technique had an effect on in-class behavior, students were asked, "Knowing I could be called on at random to answer a question made me pay more attention in class or made me prepare more for class." Students who had been called on involuntarily were asked, "Being called on at random made me participate voluntarily more at other times."

To allow students to elaborate on their thoughts about involuntary participation in large lecture classes they were asked, "Elaborate on your thoughts about calling on students at random in large lecture classes." We hoped that this question would offer students an opportunity to comment on our style of questioning as well. Of our 124 respondents, 90 filled out this closed-ended question.

Results and Discussion[1]

Significantly more students agreed overall that they preferred instructors to call on students at random to answer critical thinking questions rather than fact-based questions ($\chi^2(2, \underline{N}=124)= 21.5$, $\underline{p} <.05$, for the overall chi square; $\chi^2(1, \underline{N}=90)= 17.8$, $\underline{p}<.05$ for agree vs. disagree). See Table 1. This finding is also supported by students' open-ended comments as can be seen in Table 2. Although this result is consistent with our expectations, one should observe caution in interpreting this result because it is not clear whether it reflects a true preference, or reflects the fact that students were exposed to critical thinking questions solely.

Insert Table 1 about here

Insert Table 2 about here

Consistent with other claims (McDougall & Cordeiro, 1993), significantly more students agreed that knowing they could be called on at random made them pay attention or prepare more for class than disagreed ($\chi^2(2, \underline{N}=124)= 7.0$, $\underline{p} <.05$, for the overall chi square; $\chi^2(1, \underline{N}=91)= 4.0$, $\underline{p}<.05$ for the comparison between agree vs. disagree). This finding was echoed in students written comments. Thus, we conclude that students believed that this method had some effect on their behavior that could benefit learning.

---

[1] Although we did not anticipate sex differences in responses to open-ended questions, we investigated this possibility in our statistical analyses. No sex differences emerged, hence, these results are not reported.

This finding is in contrast with Gleason (1986) who notes that students' comments can decrease class attentiveness.

Students who had been called on at random did not overall agree that this experience increased the likelihood that they would participate voluntarily at other times, $\chi^2(2, N=57)= 3.3$, n.s. Thus, we cannot conclude that being called on at random served as an "ice breaker" leading to subsequent voluntary participation. One possible explanation for this result is that students did not remember whether their experience had an effect on their voluntary participation. This would be particularly true for students who had been called on at the beginning on the semester. An alternative explanation is that students did not have enough opportunities to answer questions involuntarily to have made an impact on their voluntary participation. This second possibility predicts that a relationship between involuntary participation and voluntary participation would emerge in a smaller course because students could be called on more often over the semester. Such a relationship is suggested by Christensen (1989).

Students' written comments about calling on students at random in large lecture courses were analyzed by categorizing their responses into several categories. The first category, global evaluation (54% of comments) shows that 44% of students' general comments were generally positive, while 10% were generally negative.

The second category, positive effects of the approach (59% of comments), showed that, in contrast with Gleason (1986), 22% of students felt that the method kept their attention or interest in the material and 7% mentioned that they enjoyed the discussion generated from the students. Additionally, in line with Gleason's (1986) suggestion that communication in large lecture classes is facilitated when instructors try to make students feel that the space is smaller than it actually is, several students noted that this method made the course "feel small" and that they felt like an individual. Other comments in this category supported learning goals (e.g., provides a productive, relaxed and friendly atmosphere).

While many students had positive comments, some were negative (16%). Consistent with Gleason (1986) some students felt nervous or self-conscious about speaking or felt that the procedure slowed the learning process.

The final category, suggestions for implementation (25% of comments), captured some aspects of our method that students liked such as the fact that we addressed students' by name. Other comments highlighted the need for sensitivity when using this approach (Don't call on unmotivated students exclusively; some students may be bashful about speaking because they have accents) .

In sum, students evaluations were generally positive, although some students identified potential concerns with the method. Additionally, we found some evidence that this method may support learning goals. Given that the trend to enroll large lecture courses will not cease in the near future, we agree with Gleason (1986) that it is an instructor's responsibility to make these classes quality learning environments. Calling on students involuntarily may be one way to work toward this goal.

Should this Method be Used in Every Large Class?

Although our evaluation data suggest that there are some benefits to calling on students at random in large classes, this technique may not be appropriate for all cases. An instructor's decision whether or not to use it must take into account their willingness to field the broad range of questions and comments that can be engendered from this approach.

For those instructors who feel uncomfortable with their ability to mediate students' comments or believe that calling on students at random takes away students' right to choose whether or not to participate, we recommend a "pseudo-random" questioning technique (as described in Gleason, 1986). In this approach, specific students are chosen at random and instructed to participate in the following lecture. Students who know in advance that they will be called on are thought to prepare more for the class. The benefit of this approach is that instructors are less likely to catch students off guard. A potential drawback to this approach is that only a small number of students (those who know they will be called on) may prepare for class.

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Table 1

Summary of Results to Closed-Ended Evaluation Survey Questions

Item	Frequency (%)			χ^2
	Agree	Disagree	Not sure/ Don't know	
I would prefer instructors to call on students at random in large classes to answer critical thinking questions rather than fact-based ones	65(52)	25(20)	34(27)	$p<.05$
Knowing that I could be called on at random to answer a question made me pay more attention in class; made me prepare more for class	55(44)	36(29)	33(27)	$p<.05$
Being called on at random made me participate voluntarily more at other times	23(38)	19(32)	18(30)	n.s.

Note. Percents have been rounded off to the nearest whole number.

Table 2

Categories of Students' Comments About the Use of Involuntary Participation in Large Lecture Classes

Response Category	% Responding
Global Evaluation	
Good idea; positive experience	44
I did not want to be called on at random; only those who have their hands raised should be called on to answer questions	10
Positive Effects of Calling on Students at Random	
Kept my attention; interest in subject matter	22
Makes students prepare for class	10
Makes the class feel small; I feel like an individual	8
Provides productive, relaxed, friendly atmosphere	7
Enjoyed discussion generated from student comments	7
Shows that Professor cares about students; takes students seriously	5
Negative Effects of Calling on Students at Random	
Made me nervous or self-conscious	12
Takes too much time; slows learning process	4
Suggestions for Implementation in Class	
Ask critical thinking; opinion questions only	10
Professors should not force students to answer questions	5
It is best if the professor asks for student names and tries to remember them	3
Calling on students at random should be done in moderation	2
Ask fact questions only	2
Don't call on unmotivated students exclusively	1
Note that some people have accents and may be bashful about speaking	1
Make certain the talker speaks loudly or rephrase the answer to class	1

Note. Number of respondents = 90. Any one response could be coded into one or more categories. Percents have been rounded off to the nearest whole number.

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TQM in Class: From Disaster to Success in Essay Exams in Introductory Psychology

by

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TQM in Class: From Disaster to Success in Essay Exams in Introductory Psychology

1. A Japanese Teacher in America:An Introduction

In early October of 1991, about two months after I was hired, I gave my first midterm exam to one hundred-seventeen students in four sections of my introductory psychology course, namely, General Psychology. The exam consisted of four short-essay type questions (for example, "Explain fixed interval schedule of reinforcement with one concrete example from your daily living."). Totally unexpectedly, seventy students(60%) received an F, scoring below a 60 percentage on the 20-point four-question exam.

As soon as I returned the exam papers with very low scores to the students, each of the four classes was filled with shocked, confused, disappointed faces and those of even angers and a few curse words. A couple of the students left the classroom by smashing the door, one student crumpled the exam paper and threw it on the floor, and several students complained that some questions were vague and ambiguous, that it was unfair to give only four questions although five chapters had been covered(i.e., implying that the exam did not cover topics they studied hard), and that they did not like essay exams, insisting multiple-choice questions should have been given, not the essay-type ones.

It should be reported, however, that during the entire exam period no students asked any questions regarding the vagueness or ambiguity of the test items, that 111 students(95%) left the classrooms within 30 minutes after they started taking the 50 minute exam, and that I observed no faces or attitudes indicating the questions were too difficult, confusing, or otherwise ambiguous; instead, the contrary was in their faces(i.e., satisfaction, confidence, relief, and expectation of high grades). I also had explicitly predicted the four questions for the exam more than a few times before the exam date. And in the very first class in the semester had I reported that no multiple-choice but only essay exams would be given.

More unexpectedly, however, it appeared that it was I the professor who was to blame for their failure, not the students themselves. No question or discussion concerning the contents of the exam questions was made or heard in class at all: the students' concern was obviously nothing but their grades. Moreover, by a Department policy, I had to do lots of paperwork to explain why so many students(nearly 70% of them with a D and an F) "failed" on the course, a rather easy, basic General Psychology, to each of their advisors as well as the Department Chair. It seemed that the very problem of the failure of many students was rooted in me as a Japanese teacher to American students(!?):there was no other reasons except their teacher's problem. As far as public records were concerned, there was no such a report on campus that many students were failing in many courses, virtually most courses taught by American professors:if there had been similar cases like mine, there would have been campus-wide scandals in other words. There was no such a scandal on campus, at least publicly. I knew some foreign teachers who faced the similar problems in the U.S. where students' poor performance is almost always attributed to their professor's problem(see Toom, 1993, for example).

That was my awful experience in the first couple of months in the teaching of psychology at a two-year college of technology where I had a full-time position for the first time in American higher education.

2. Doing Bad and Feeling Good

I do not believe that the disaster happened only to me as a foreigner teaching in America. Rather, almost every professor here and everywhere across America, regardless of being Japanese, Russian, German, Mexican, or American, experienced the similar, maybe except those in nation's top colleges and universities. Since the 1983 Nation at Risk study, the U.S. and its educators witnessed the nation's schools deteriorating. And, needless to say, several years later had many universities and colleges received those students with poor performance in primary and secondary education. At the same time the American economy faced the tough challenge from abroad in the globally competitive market (e.g., Japan and Germany).

Best symbolized by the education summit in 1989 when then President Bush called all the Governors to discuss American educational problems and goals for the 21st century, it was very urgent and imperative to improve the school performance of the American youth, the future of the nation. Despite a national consensus for the educational improvement in such movements as establishing national standardized curricula, tough graduation requirements, teacher retraining, even "back-to-the-basics," namely, three R's and vicious attempts of abolishment of tenureship(i.e., an assumption that once tenured, the teacher stops his/her vigorous work), distinctive outcomes for the improvement has to be made yet.

Without much improvement, however, students are successful as far as grades are concerned: they do bad actually , but feel good because most students never fail and their grades are good enough to pass courses. Despite the poorest math scores among six countries(the U.S., Korea, Spain, Britain, Ireland, and Canada), a majority(68%) of the American 13-year-olds think that "I am good at mathematics," reported Charles Krauthammer in his Time(Feb. 5, 1990) article. The University of Minnesota Psychologist Howard Stevenson(1987) was intrigued with his finding that over 80% of American students and their parents believe they are good at math while less than 20% of Chinese(Republic of China) and Japanese students and their parents think them to be good at math although American students are incompatibly much behind their Asian counterparts. According to the College Board's study, 28% of college-bound seniors taking the test said they had A or B averages in high school in 1972. In 1993, 21 years later, it was 83% while SAT scores were failing to the current 902 from 937(Leo, 1993). My local newspaper The Buffalo News(March 3, 1994, B1) informed that 58 percent of 498 local teachers' union presidents reported that their members had been pushed to inflate grades primarily by administrators and parents. With all reasons, "in America, everybody is above average"(Leo, 1993, p. 22). As recent as early this year, however, Alfred University's newspaper, Fiat Lux(Jan. 31, 1996, p. 1 and 4), reported that 19% of its freshmen were given academic probation and The Buffalo News(Feb. 19, 1996, p. B1 & B4) informed another bad news that 28% of University of Buffalo's full-time undergraduates were on academic probation.

Because of a nation's consensus about the importance of education in the global economy and the age of technology, nation's colleges and universities have a record of over 14 million students now. This means seven times more students in American colleges and universities than those in Japan. How are they doing? Are they doing good?

3. Total Quality Management in Class:Participation and Collective Decision-Making

The disastrous results of the midterm exam in my first teaching career in the fall of 1991 at the current college of technology continued every semester until now and I expect they will happen continually unless some fundamental educational reforms take place. For the last nine semesters I taught a total of 1017 students in four sections of General Psychology course. The results were almost identically bad(see Figure 1). Nearly sixty percent of the students earned an F each semester while only about ten percent of them received an A and other 30% of the students were between the two grades.

In order to identify real problems/causes of their poor achievement and improve(and subsequently their grades), I decided to apply some of the Total Quality Management(TQM) principles (Seymour, 1991) :participation and collective decision-making, which are quite "popular" in the business community(Harvard Business Review, November/December, 1991, pp. 94-95, for example). Although TQM in the U.S. may be different from that in Japan(see Yatani, 1987), my conviction was clear, as the American founders of TQM

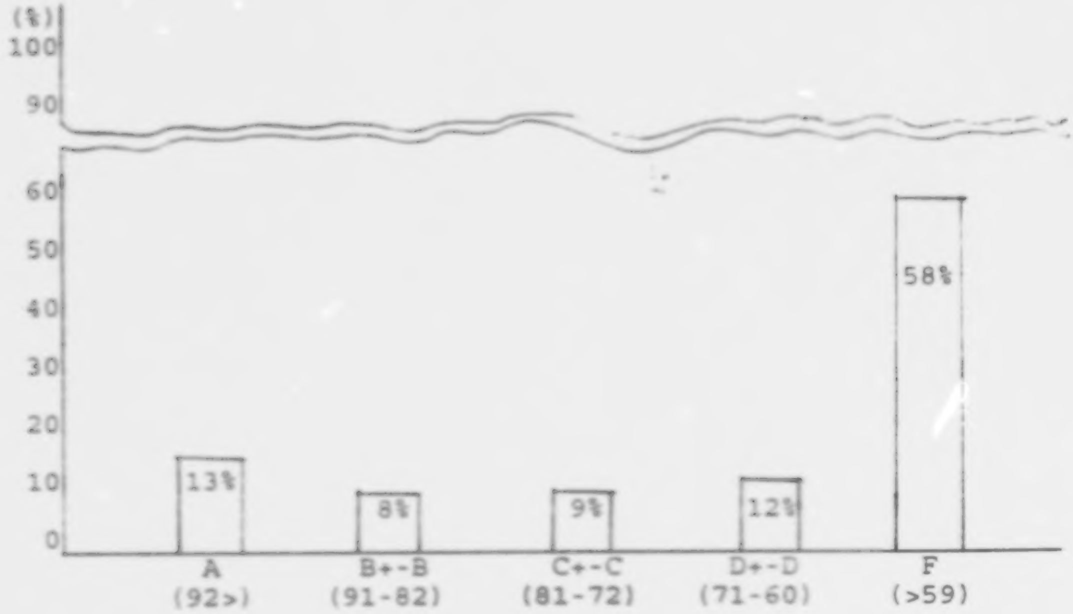

Fig. 1. Percentages of the student population(N=1017) earned midterm grades(A - F) on the 20 pts.-first exam between Fall 1991 and Fall 1995. The parentheses indicate exam scores(%).

(i.e., Charles Protzman from the Hawthorne Plant, Homer Sarasohn, and W. Edwards Deming) taught to Japanese immediately after the World War II and were considered to be responsible for the recovery of the Japanese economy and its miraculous growth toward the world second economic power:everybody can improve if she/he works hard; and, workers(i.e., students in this case) know best what to do to improve[productivity, efficiency, and their well-being] (see Bradley and Hill, 1983, for example).

It was my very concern to find out why many students failed on the exam. It also should have been their very concerns. With many reasons stated before, I did not believe those students with an F did study "hard." Any type of essay exams which require students to write and organize their ideas and subject matters before writing have one most important, essential advantage over multiple-choice exams:written answers are the proof and undeniable evidence that shows why they failed. You must know why you failed and what mistakes you made before you correct them:without finding out the mistakes, none can correct them, in other words. Immediately after returning their exam papers, I made three suggestions to find out their mistakes and make themselves aware of their own errors before responding to their complaints:

(1) those students who want to improve their grades take a makeup exam;
(2) each student must have an individual conference with the instructor to discuss the first exam and the makeup after doing the latter; and,
(3) if their makeup exams were satisfactory, each students would get as many as 10 points, a 50% of the first exam (20-point midterm exam).

No one complained about my suggestions except a few who earned an A on the exam. While the few complained to me outside class, insisting that those with an F deserved their Fs because they did not study hard, but were fooling around, most of them looked very pleased with my proposals. I gave them a 5-day Academic Mini-Break to do the makeup, a take-home exam, and the exam questions were exactly the same as those of the first exam. None could be more pleased.

a. Identifying the problems and causes of the students' failure

Over one hundred students came to my office next three weeks to discuss their exam papers, the original one with an F or below

B or C, otherwise and the makeup. As soon as they came in, I found each of them quite happy and relaxed, probably expecting a big improvement of her/his grade. It was obvious that they did correct their mistakes by checking the textbook, their notebooks, or even working with other students for correcting them during the break or any time when they found convenient after having the exam back from me. From the Kurt Lewin's teaching, fact-finding itself was the solution-finding.

Based on my previous three suggestions, it appeared my office was a sort of "non-threatening environment," one of the 14 TQM principles, where each student presented corrected or revised answers freely to me. In almost all cases my response to the students was very simple:"Very good. I like your new, good answers. But, what happened to your first exam? Why was that so bad?" Since all the questions and their appropriate answers could be easily found both in the textbook and notebook as well as in my lectures, the process of doing the makeup was a sort of self-realization that she/he had hardly spent enough time studying for the test, to begin with. Here are a couple of the exam questions and their typical failing answers to them:

> Q: Explain fixed interval schedule of reinforcement with one concrete example from your daily living.
>
> A: When you work hard everytime, you get something good.

[Obviously, this student has no concrete idea on "interval schedule" or/and "example from daily living." He was one of many who left classroom within 30 minutes after starting the exam.]

> Q: When you were shopping in a local mall, you suddenly heard a little boy screaming. Clinging to his mother's shoulder,

he was crying fiercely while his mother was talking to an old woman. From their conversations, you realized the woman was a dentist and that the boy had had his tooth pulled a couple of days before. Explain why the boy started crying when he and his mother met the old woman in the mall **by applying classical conditioning(NOTE:you must use the technical terms in your answer**).

A: When the dentist works on people teeth usually it hurts. When the boy went to the dentist she probably drilled a cavity or pulled a tooth. Now the boy sees the dentist and affiliate her with pain. Even though she is not hurting him every time she sees her he thinks she is going to hurt him and gets scared and cries.

[Despite the underlined boldfaced direction to use the technical terms of classical conditioning, this student either ignored the direction or did not read it carefully. Over 50% of the students made the same "error." She did not consider using such technical terms as NS, UCS, UCR, CS, and CR to be essential as a college-educated person. This is a serious problem considering the answer by a 9-year-old to the same question. See below.]

A1: The boy thought that the dentist hurt him, and when he saw her again he remembered the pain and clung on to the mother's shoulder for safety.

(Note: It is obvious that there is no substantial difference between the two answers and therefore between this college student and the elementary student in their intellectual level. By not using the classical conditioning terms, this college student did not demonstrate her college level work, at least, which is a very serious problem we teaching faculty must be concerned. What kind college graduates are we producing to the world where much more problems are waiting for their solutions!)

As seen in these answers, the problems and causes for the many Fs in my General Psychology short-essay type exam were rooted in:

- lack of or no study about the course materials(see also Yatani, 1994, regarding the poor school performance of many students in secondary education);
- poor comprehension of course topics;
- lack of study/work motivation;
- extremely poor writing as well as organizing skills;
- poor preparedness or unpreparedness for higher education;
- lack of seriousness for course work; and
- preference of multiple-choice to essay exams.

These are what I got from my students during the individual conferences. Surprisingly enough, most of the students visiting to my office with the two exam papers were quite open, easy, honest, and even "talkative" about their failure as their own problems, not something else to blame(instructor, the nature of the exam, etc.). And most of them were appreciating very much for the chance and opportunity to talk about their bad exam with me. What was most important for me was to prove my strong conviction to be right: finding and admitting the problems, often quite painful though, is almost finding the solutions. I did expect much changes, good changes in the students' study behavior and attitudes toward their work in college.

b. Implementation of the Solutions:Participation and Collective Decision-Making

According to the three underlying assumptions of why TQM works(cf. Bradley & Hill, 1983), (1) not only managers(teachers) but workers(students) can also improve, (2) the workers(students) know best what to do(they are a reservoir of relevant knowledge, in other words), and (3) quality(i.e., good work) is not just in one division(i.e., one course) but in the entire production process (i.e., the students' entire college life).

For their total improvement in not just psychology test scores but their worklife improvement, all the students in my General Psychology course were encouraged to participate in "making essay exam questions for the next tests, two of the three to be given in each semester. They usually came up with over 250 questions(see appendix A) and then they collectively chose the "best 10" or "best 15" from them. With the instructor's help they revised, modified, and "polished" those best questions. About one week after the students received the finalized exam questions, they took the test "they made by themselves."

As an old proverb states that "teaching is learning," through these processes, participation in decision-making, the students did know what to study, how to study, and studied "hard" to answer all the questions available or to meet the challenge, in other words. The entire processes were set in such ways that the students were not allowed to make excuses not to work hard and that their work/ study behavior was not controlled from outside(i.e., instructor) but from within, the students themselves.

It was often observed that the students exchanged their ideas, "answers," notes, discussions, and other work/study behavior in class. Such news came to me in office that they worked hard in their dormitories, library, or elsewhere. I also had many student visitors to my office to ask questions and even their career goals or other personal matters. The results of their tests were quite impressive:not just scores but well written answers were found everywhere in their exam papers. Some students "showed off" by writing the answers extensively and quite thoroughly to "impress their instructor," which was very rewarding to me and I really appreciated. The overall results in the last nine semesters are shown below: the second exam scores(Fig. 2); the third exam scores (Fig. 3); and, the overall final grades(Fig. 4).

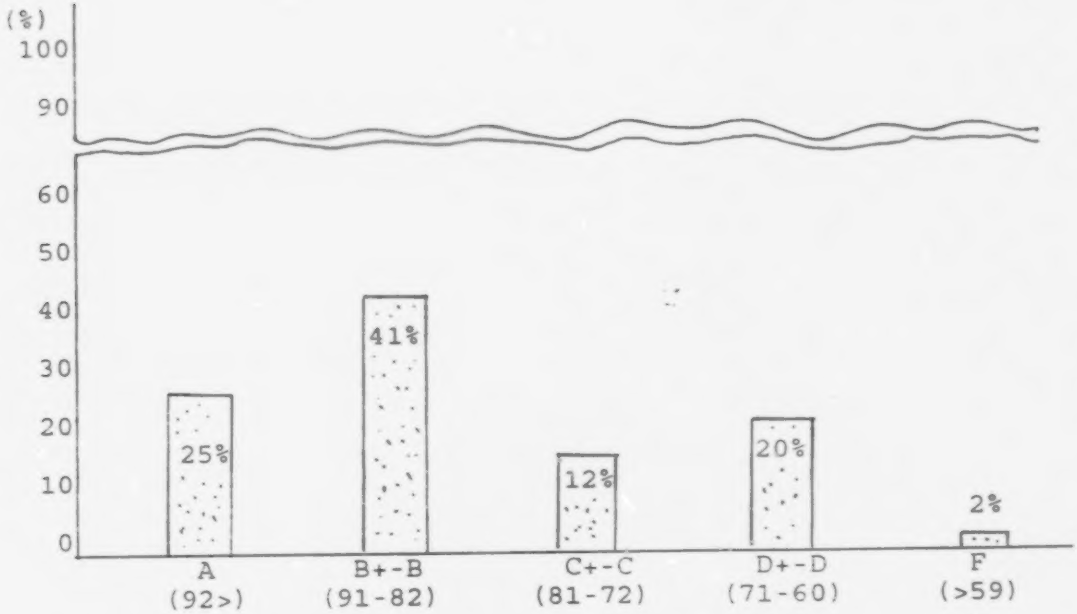

Fig. 2. Percentages of the student population(N=1017) earned grades A through F on the 30 pts.-second exam between Fall 1991 and Fall 1995. The parentheses indicate exam scores(%).

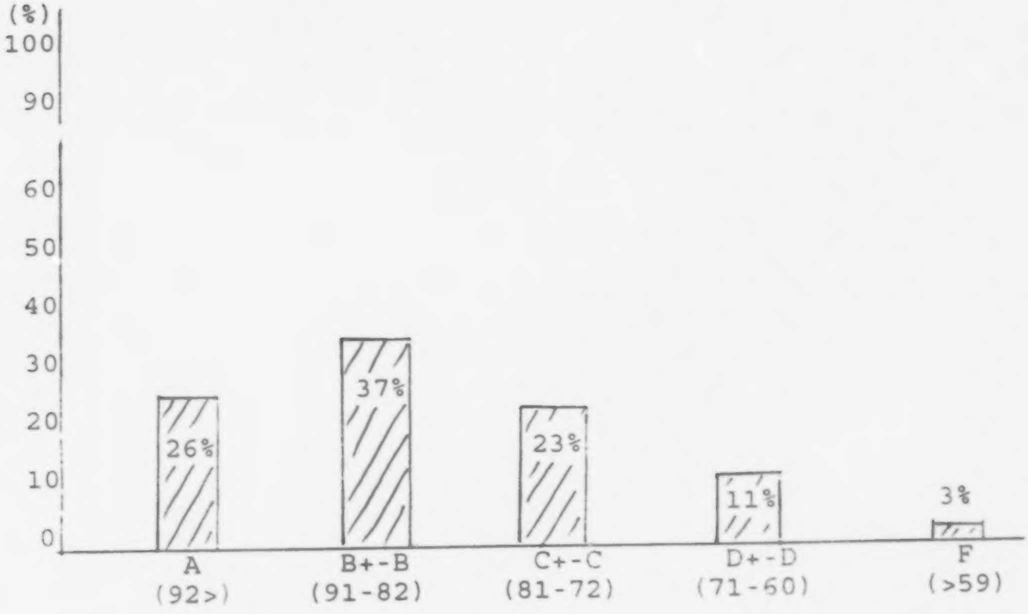

Fig. 3. Percentages of the students population(N=1017) earned grades A through F in the 40 pts-endterm exam between Fall 1991 and Fall 1995. The parentheses indicate exam scores(%).

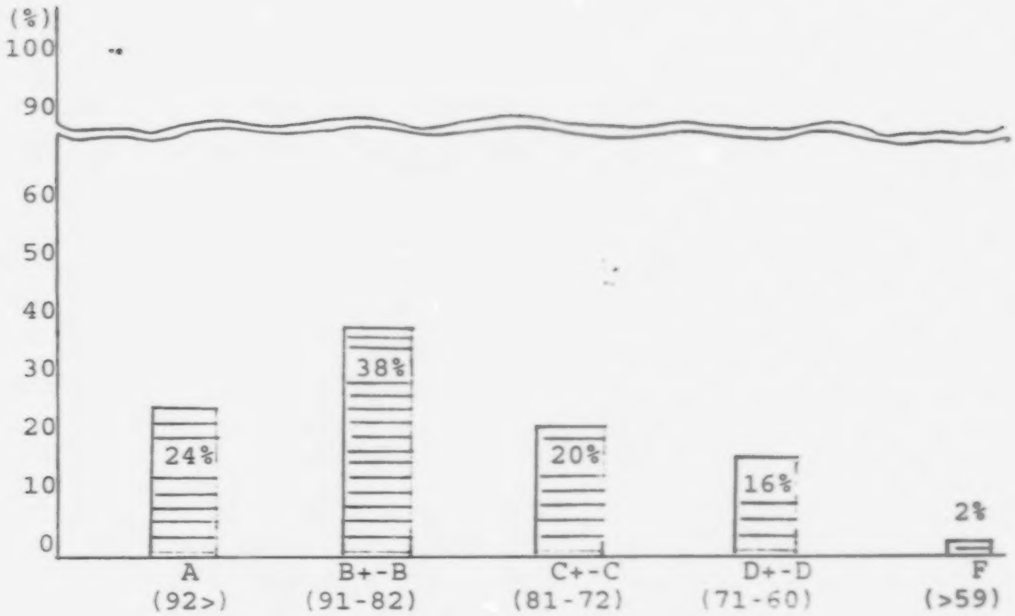

Fig. 4. Percentages of the student population(N=1017) earned overall final grades(A - F) between Fall 1991 and Fall 1995. The parentheses indicate total scores in the three exams plus 10 points either from class participation or homework assignments.

4. Students' Work Motivation as the Key for their academic Success:Conclusion

From very scientific methodological point of views, these results shown may bring some criticisms or reservation in their evaluation, but the instructor observed and experienced the students overall improvement and high achievement in his 4 year-teaching career. If our college students, many of whom are unprepared and self-complacent with low achievement though, should be successful, it is their professors' work to motivate them that is perhaps the most important(Shanker, 1989; see also Yatani, 1994, on a cross cultural comparison about teachers' roles). For that goal of motivating the students, I used group activities(e.g., collective decision in making exam questions) and promoted a strong sense of shared identity, individual opportunity not only to improve their poor grades but also to influence group goals and activities(e.g., individual conferences and participation in making questions and making the "best" ones). If TQM is "taking responsibility for workers by the managers" not "executing of their power over their subordinates," to my correct understanding, it is teachers, not necessarily students, who are encouraged to apply its principles to the academic community.

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TEACHING OF PSYCHOLOGY: IDEAS AND INNOVATIONS

CONTENT VERSUS PROCESS
DEPTH VERSUS BREADTH

Title of Presentation:	*Psychodrama: Virtual Reality Simulation*
Type of Presentation:	Oral
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Psychodrama: Virtual Reality Simulation

by Gordon Whitman

Psychodrama is utilized as an instructional vehicle to create a "virtual reality" client. Each student role plays a psychiatrist working in a firm with six to eight other psychiatrists.

The students are in five groups (firms) formed earlier in the class as "study groups." Early study group formation allows them to become familiar with each other and begin to understand group process and cooperative learning. Usually four of the five groups develop some bonding and teamwork. One group struggles with their group demands and requirements.

On Day One, an overview of the psychodrama is presented. The basic motivation to encourage and maintain student involvement includes two facts. One, the "virtual reality" client is eighty percent real and twenty percent "virtual." This gets their attention. Two, the more they participate as a "psychiatrist," the easier the unit test will be. They understand this connection.

On Day Two, each firm is assigned a psychological "perspective." The five perspectives are: 1) psychoanalytic (Freudian), 2) psychodynamic (neo-Freudian), 3) behavioral, 4) cognitive, and 5) humanistic. In addition, each firm works with trait and bio-medical psychology. All "case study" work must be filtered through these "perspectives." These are reviewed in class.

On Day Three, an extensive "case study" file is presented to them, providing essential information about their client. The contents are reviewed in class. The "case study" has been prepared by a "Clinical Psychologist" who has **referred** the client to them.

On Day Four, the "Clinical Psychologist" appears in class to **"consult"** with each firm. Students ask questions based on information that is **not** in the "case study" file.

On Day Five, the firms are exposed to art, plant, pet, and music therapy. Their client has been exposed to these therapies while working with the "Clinical Psychologist."

On Day Six, the "firms" meet extensively to consolidate information input and discuss an impending firm interview with the client.

On Day Seven, the "client" appears for an "intake interview." Each "firm" has prepared a list of questions to further fill in gaps of information and to confirm paper-work information found in the "case study" file.

On Day Eight, the "firms" meet to decide a final "diagnosis"; to construct a ten-step "treatment plan"; and to develop "follow-up" procedures. This concludes the psychodrama.

One of the major teaching-learning outcomes of this exercise is the fact that some students will get deeply involved in the process, who have not shown similar interest during other, earlier units of instruction that do not include psychodrama. This method provides new, invigorating change when compared to other types of presentations of psychological material.

One word of caution, this production is dependent on the instructor being willing to self disclose the eighty percent of reality that is present in this technique. This eighty percent could be made up, but I suspect it would not be as effective.

A Writing Workshop for Sophomores

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University of Pittsburgh at Johnstown

The writing workshop which I will be describing was designed to solve a problem that I perceived in my courses. After describing the problem and the context in which it occurred, I will describe my solution (the writing workshop), how I think it works, and some of the concerns it raises.

THE PROBLEM

During the summer of 1991, after my first year of full time teaching, I thought hard about many things that I was dissatisfied with during the foregoing academic year. One of the troublesome issues concerned the development of writing skills in my courses. Some of this may sound familiar to the other professors here.

First, during the fall semester of my first year, I taught a course in personality theory. I asked students in that course to write two papers. The second paper did not seem to be much better than the first. Although I had made extensive comments on the first paper, I had the impression that my comments had disappeared into a black hole, never to be seen again.

This impression was strengthened in the spring semester, when I had many of the same students in an advanced class, and I found that they still had the same kinds of problems in their writing. I had worked hard to provide extensive comments on student papers, but, apparently few students were reading them.

Second, when students did feel the need to talk with me about how to improve their writing, they seemed to be looking for "cookbook"-style answers. Students did not seem to become engaged in the writing process, but rather wanted to know what the finished product should look like so that they could make a copy of it.

Finally, I got many papers that had been written the night before. They were often illogical, and sometimes incoherent. Students had not bothered to proofread the papers. Students were treating the papers as homework, and I wanted them to think of the papers as products.

THE CONTEXT

To understand how I decided to address these problems, you should know something about the context in which I was (and still am) working. I teach at University of Pittsburgh at Johnstown, a regional campus of the University of Pittsburgh. About 2500 students study there, all of whom are undergraduates.

About 120 of these students are psychology majors, and the university employs 6 full-time Ph.D. faculty to teach them psychology. We teach 12 credits (4 courses) per semester. Except for the introduction to psychology course, enrollments are kept under 40 students.

We require 11 specific courses plus 3 electives for the psychology major, for a total of just under 50 credit hours. Most important in this context, students are offered a three-course sequence in personality theory, psychopathology (both of which are required), and psychotherapy (an elective). The workshop I developed was for the first course in this sequence.

Students typically begin this sequence in first term of the sophomore year. As freshmen, they had introduction to psychology and a some may have had an additional psychology course, such as child development or statistics. They completed a two-semester writing course from the English department, but have probably not written a paper for a psychology course.

In an effort to introduce them to writing about psychology, students in the personality theories course write two or three papers. These papers are not research papers. The first is a reaction paper to the ideas of Freud, who is the focus of several class lectures. The last is a synthesis paper, in which students take parts of the various theories that they think are best and put them together in a manner that "works." (A third paper, when used, is assigned between the other two and has not been submitted to a writing workshop, because of time constraints.) Thus, all students in the course have the background to understand the first and last papers.

THE WORKSHOP

In an effort to address my concerns about student writing, I implemented the writing workshop the second time I taught the personality theories course. It seemed to be successful, and I have continued to use the approach each semester I have taught personality theories.

What happens in the writing workshop? (See Appendix A for an outline.) We take a day off from normal classroom activities (lecture, discussion, student presentations) and read papers during class time. As noted in the Appendix, students submit their papers with pseudonyms. I collect them at the beginning of class and scramble them up.

Then we discuss the particular areas about which the students want feedback, and make a list on the board. The class usually generates a list of areas to be evaluated that include four or five of the following: grammar, coherence, accuracy, technical style/APA style, strength of arguments, transitions between ideas, quality of the abstract, and meaningfulness. Even though the list is normally the same each semester, I am reluctant to give the list to students; allowing them to generate themselves makes it more meaningful and provides them with a sense of ownership over it.

During the years I have done this, I have learned that students need specific guidance about how to approach the papers. Many have never before evaluated a paper. I encourage them to read the entire paper, marking and commenting as they go, and then to offer a summary comment in each of the areas the class has decided to request feedback. The summary comment is designed to indicate what major change the student author can make to improve the paper in that area.

In addition to the summary comment, students are asked to provide a numerical rating in each area that will direct the author to the area or areas that are most in need of work. I began to do this because student authors felt overwhelmed by the comments of three and sometimes four reviewers (that is, two to three students, plus myself).

I give each student a paper to review. Students may review papers individually or in pairs. As students complete their reading of the papers, they trade papers among themselves and read a second (and perhaps even a third) paper. Some students who are very concerned about details, and other who get particularly challenging papers, may review only one paper during the class period. Students record which papers they have reviewed, identifying them by the pseudonym. At the end of class, the papers are returned to me, along with a record of the student evaluator's name, pseudonym, and the pseudonyms of the papers they read.

I then read the papers myself, provide my own comments, cross out any inappropriate or inaccurate comments that I notice, and return the papers to the students. The students are encouraged to read their own papers afresh and provide their own evaluation. They are also encouraged to question or challenge any comments on their papers, either by other students or by myself. They then rewrite the papers, and submit the final draft along with the edited draft reviewed in the workshop. Only the final draft is graded.

(In the presentation, papers read and evaluated by students were handed around for examination at this point.)

BENEFITS

I perceive the benefits of the writing workshop to be several. First, I believe that students learn better writing skills from seeing the writing of others, from applying what they know about writing to student papers, and from being required to rewrite their papers. The final papers I receive from these students are superior to what they were that first year I taught the course. I have been surprised to learn that many students are more self-conscious about their writing when they know their peers will see it. Some students present poor drafts to the workshops, of course, but most do not. Some take much more care with a first draft to their peers than they do when presenting a final draft to me.

Second, students have the opportunity to understand, in more detail than occurs in class discussion, what two or three of their peers think about course material and why. This provides them with a taste of what an academic community can be like - people present ideas, and other people react. An interesting related effect is that students become keenly aware that others do not agree with them - that is, that their way of thinking about something is not the only obvious way of approaching a topic. This galvanizes many students into presenting their ideas more clearly and persuasively.

CONCERNS

What are some of the concerns that are raised? First, the concerns of students: Over the four semesters I have used this approach, I have had two students who are sensitive to others' evaluations who have responded with anxiety. In both cases, the student has submitted the paper on an unusual kind of sheet paper that is recognizable across the room. This allows them to detect who is reading their paper. One of these students was very anxious throughout the workshops, and assumed that laughter on the part of other students was laughter directed at the student author when in fact the student readers were simply joking around.

Last semester, I had two students (working together) who were rude and sarcastic in their reviews, in ways that I feared might be hurtful to the student author. I commented on the paper about the inappropriate nature of their comments before I returned it to the student author, and I also talked individually with the student author. One student reader dropped the class shortly afterward, and I discussed the problem with the other. The student target of all of this is one of my advisees, and as far as I can see, no lasting harm has been done.

Second, what are the concerns on my part? Obviously, doing papers in successive drafts is a lot of work. I have been able to limit my classes to 20 or 25 students in each of two sections, to make the workload manageable. I usually have a total of 40-45 students in this course, across the two sections. I think that having student readers actually reduces the amount of time needed for me to read the papers. Many students compulsively mark errors in grammar and spelling, so that I feel no need to comment on those areas. Some of the better students provide excellent suggestions about improvements, so that I can just write "agreed" and "yes" below their comments and add a few remarks of my own.

CONTENT/PROCESS

Another concern is that I am sacrificing time that might be used to present new material. Indeed, when I discuss the writing workshop with colleagues, many say they could never use it because they would have to give up lecture time. Generally, many of the interesting new pedagogical techniques we hear about have been criticized on that ground: they push aside content. The writing workshop, with its focus on course material with which students are all familiar, avoids this problem nicely. Students do often spend time reacting to the papers on the level of ideas. They talk about whether a particular idea is accurate as presented by the student author. They evaluate the quality of arguments. Occasionally, they even cite evidence to support their concerns about the papers. When they process the papers, and the ideas contained therein, on this deeper level, I think they are easily learning as much as they might in more structured class activities. They are also learning how to converse about ideas, which is itself a valuable part of the college experience.

Appendix A

What Happens in a Writing Workshop?

I. The Day of the Workshop

- A. Reference materials are supplied by the professor: the APA Style Manual, writing guides, a dictionary, and a thesaurus.
- B. Papers are collected at the beginning of class and are scrambled. Student authors are identified by a pseudonym.
- C. Students select areas in which feedback should be provided. Their ideas are recorded on the board; the usual list includes four or five of the following: grammar, coherence, accuracy, technical style, strength of arguments, transitions between ideas, quality of the abstract, and meaningfulness.
- D. Students need specific guidance about how to approach the papers. They are encouraged to read the entire paper, marking and commenting as they go. Then they are asked to provide a summary comment in each of the areas that the class decided to ask for feedback ("C", above). The summary comment is designed to indicate what major change the author can make to improve the paper in that area. Students also provide a numerical rating in each area that will direct the student author to the area or areas that are weakest.

D. Students choose to work individually or in pairs.

E. Each student gets a paper to review.

F. Students ask specific questions of the professor or of each other. They consult the reference materials.

G. Students record which papers they review, identifying them by the pseudonym.

H. As students finish reading the papers, they trade papers among themselves and read a second (and perhaps even a third) paper.

I. At the end of class, the papers are returned to the professor, along with a record of the student reviewer's name, pseudonym, and the pseudonyms on the papers they read.

J. Students receive credit for participating appropriately in the workshop.

II. Following the Workshop

During the next several days, the professor reads the papers, providing comments and responding to inappropriate or inaccurate comments. The papers are returned to the students, who are encouraged to read their own papers afresh and provide their own evaluation. They then rewrite the papers.

III. Final Paper Submission

Students submit the final draft along with the edited draft reviewed in the workshop. Only the final draft is graded.